Issue 100

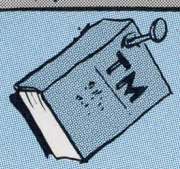
# PS

1961 Series

# THE PREVENTIVE MAINTENANCE MONTHLY

WILL EISNER

# HOW TO GET




*Next time you're about to cuss a "bad break"—halt!*

*"Bad breaks", as you usually see after you pick up all the pieces, hardly ever just* **happen.**

*Bad luck—from a broken boot lace to a fizzled missile—is usually* **caused** *by some sort of goof-off.*

*No boot lace, f'r instance, is likely to snap while you're standing inspection—unless you failed to replace a frayed lace when you first noticed it.*

*And your equipment'll hardle ever conk out in the middle of a mission—unless you failed to pull the PM needed to keep it in shape to operate.*

*One of the first facts of life is that a man mostly makes his own luck.*

# HOW TO GET LUCKY—

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*One of the first facts of life is that a man mostly makes his own luck.*

*Which simply means that the best way to make your own luck good is to do each maintenance job right, and do it in time.*

*Like the lucky bird said, when somebody growled because he got the breaks—"Yup, the harder I work, the luckier I get."*


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**PS wants your ideas and contributions, and is glad to answer your questions. Names and addresses are kept in confidence. Just write to:**

*Sgt Half-Mast,*
*PS Magazine,*
*Raritan Arsenal,*
*Metuchen, New Jersey.*


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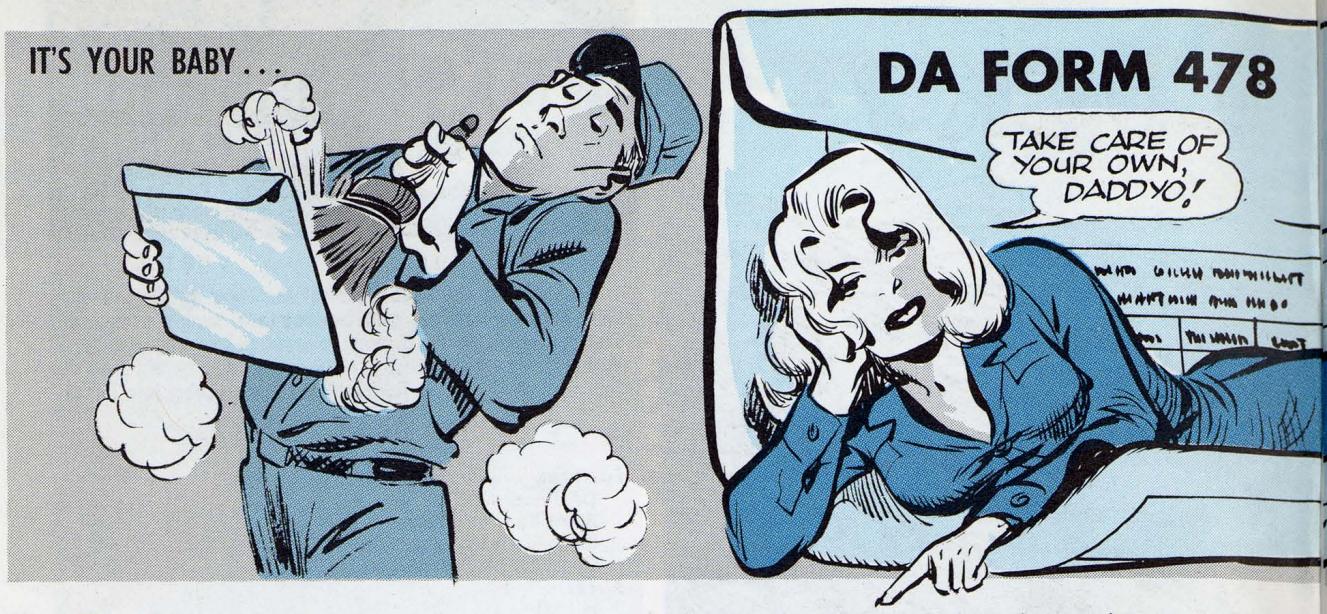


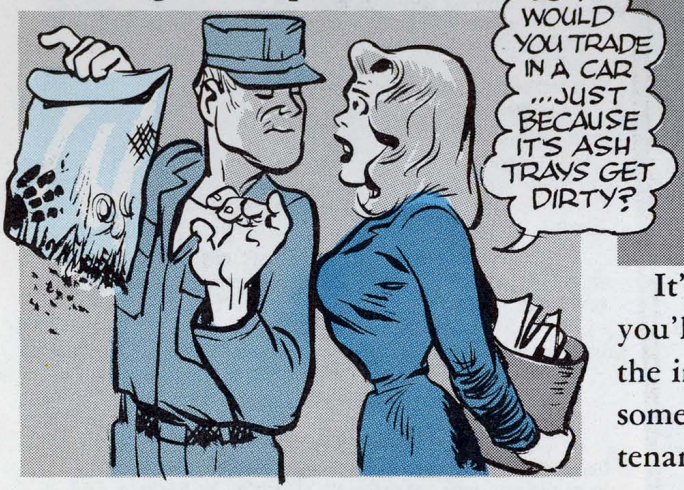

The title says it!

You'll also find it in Change 3 to AR 750-5 (Maintenance Responsibilities and Shop Operations).

And everything else points to it . . . the **using unit** is responsible for the care and keeping of an item's vital maintenance and inspection records . . . and that includes **cost** information.

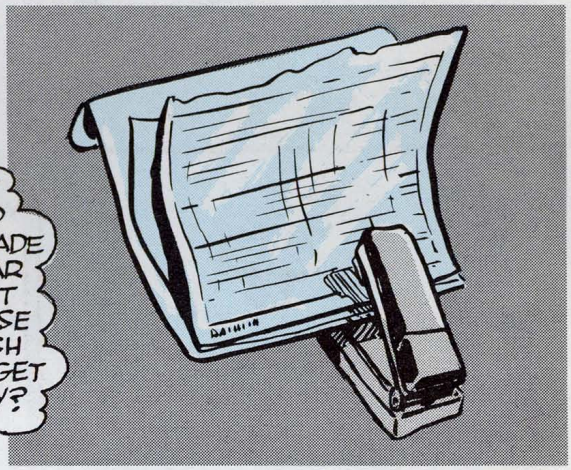
So, watch yourself, friend . . . take care of your equipment's 478's and their contents. It'll pay you to be extra persnikity about the clarity and completeness of the info on the jacket itself.

And, for goshsakes, never toss out a 478 just 'cause it's all filled-out, dog-eared or greased-up.

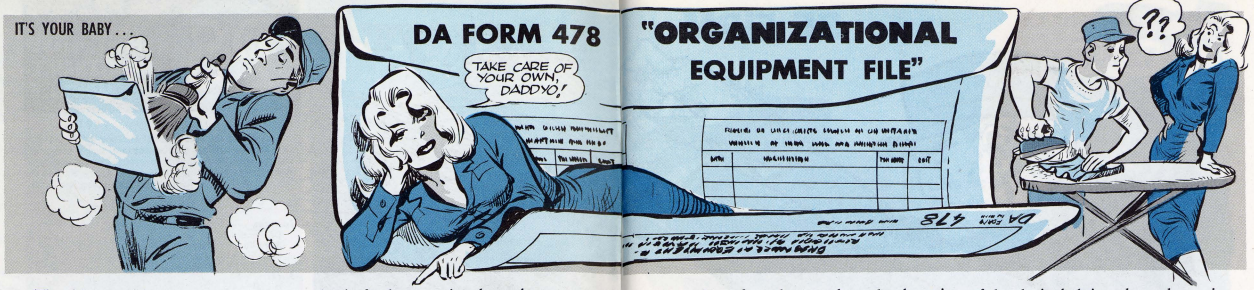



Anybody that worries about the appearance of a 478 jacket (except for being able to read the entries) is just forgetting that it's a form meant for use in a **shop** — and it's going to get fingerprints and grease smudges.

Any time a piece of equipment gets an additional 478 because one is all filled in, you must put the old info into the new jacket. You can do this easy enough by cutting the old jacket apart and stapling it in the new file.



It'll also pay you—in more ways than you'll ever guess—to carefully check the info on the jacket any time you get some equipment back from your maintenance support outfit.

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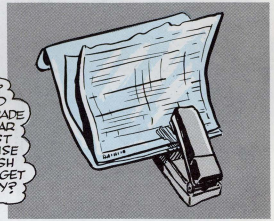

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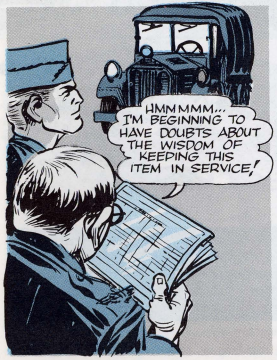
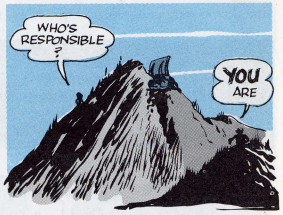
You don't have to be ugly about it . . . but, if your support outfit is ever careless . . . or forgetful . . . about the way they fill in maintenance info on the jacket file . . . be sure to see 'em about it . . . ask for a correction, or whatever's needed. They're just as intersted as anybody . . . maybe more so . . . in guarding serviceable life . . . and the maintenance info on the jacket plays a mighty powerful role in helping the tech service people decide the fate of each and every piece of equipment you use.

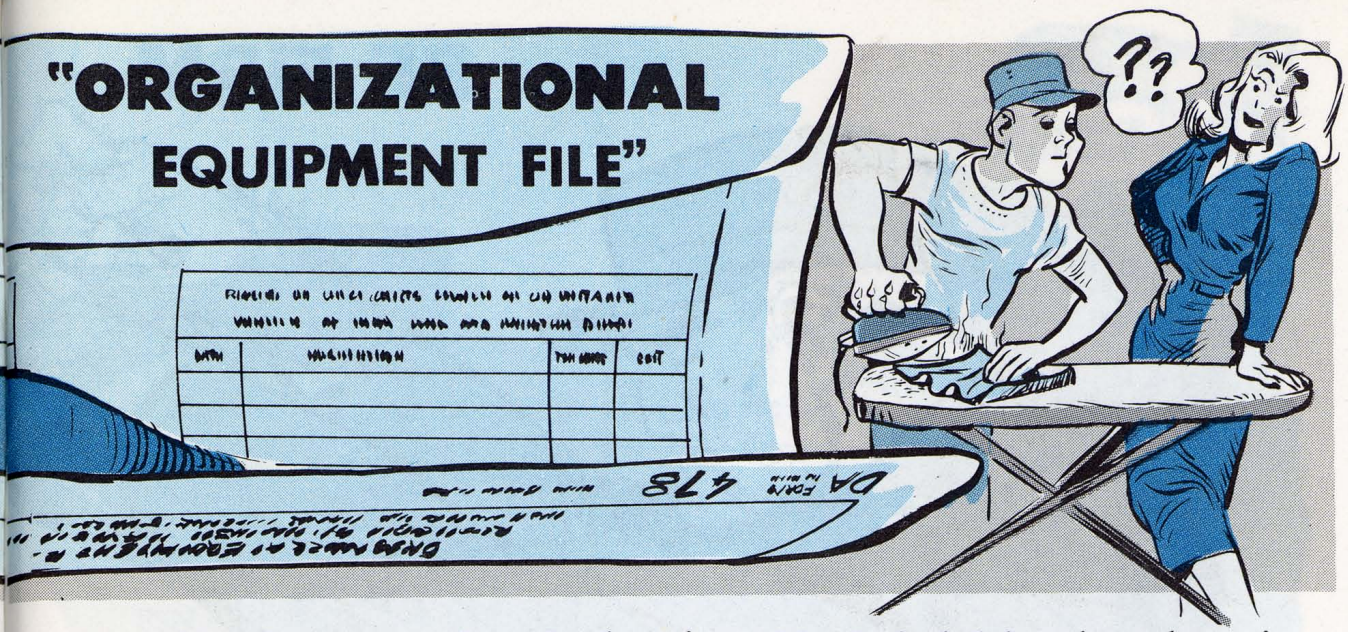



In some places it's SOP for the unit to check out the jacket entries (against the DA Form 811) with the shop inspector, or supervisor, before a vehicle's signed for and returned to duty. The support unit may be responsible for entering information, but the **using unit** is responsible for the overall record and its completeness.




And another thing. You'll see space on the back for cost info. Your support unit fills that in only if your Army Commander gives the word that he wants it kept.

# "ORGANIZATIONAL EQUIPMENT FILE"

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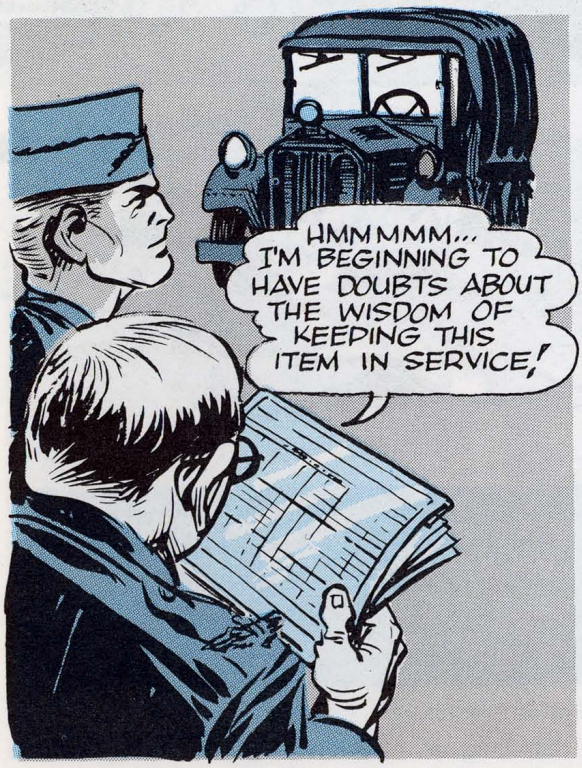


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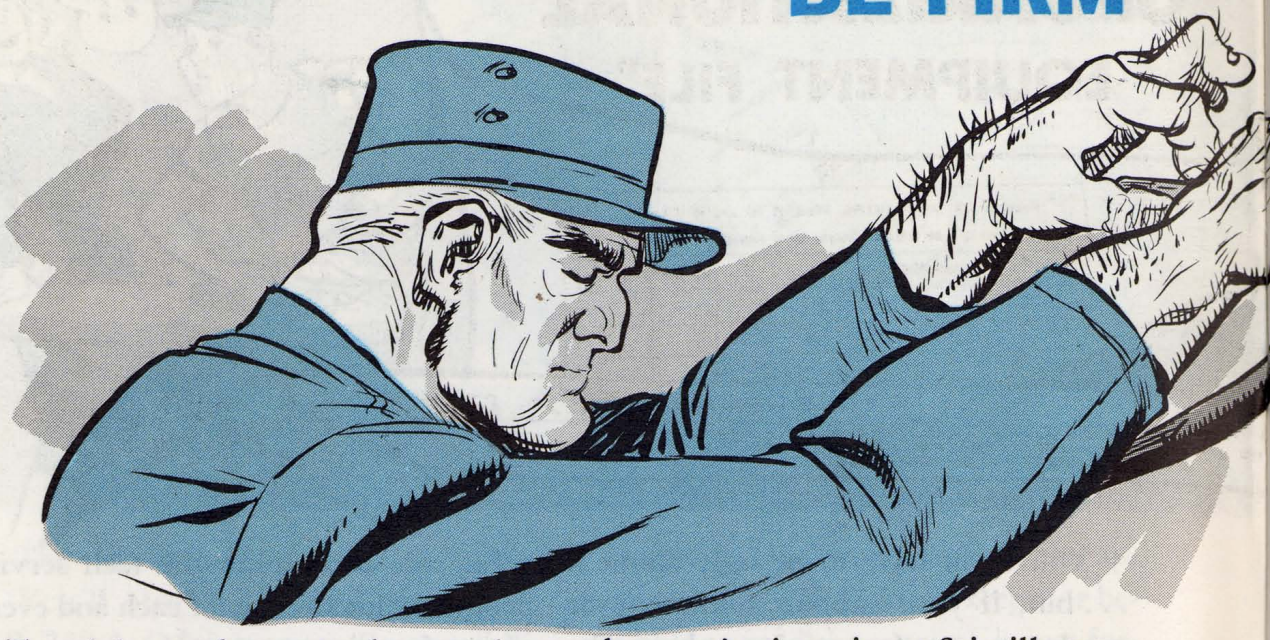

Too tight can be worse than too loose when you're inserting a Scintilla-type waterproof connector.

The Scintilla is the ring-and-sleeve gismo that connects to control boxes, junction boxes, generators, regulators, starters, and some magnetos.

If you strongarm this connector and twist it up too tight, you'll be stripping threads—then vibration will shake the connection loose on a dark night four miles from nowhere.

And if you treat it too kindly, you don't get enough torque to seal the grommets. Then you wind up with a loose, leaky connection that's likely to fail at an embarrassing time.

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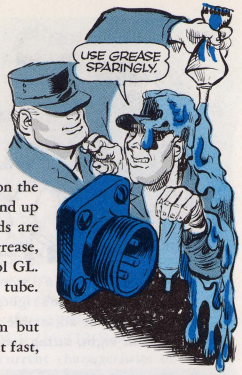
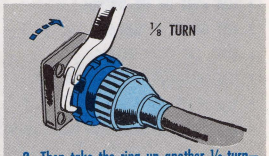
# *but gentle*



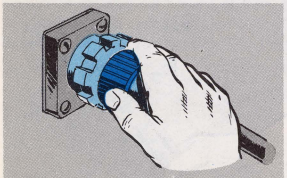

So, first make sure there's no oil or grease on the grommets, to spoil the seal, nor any grit to grind up the threads on that soft metal. If ring threads are real dry, it's OK to lube 'em sparingly with grease, Aircraft and Instrument, MIL-G-3278, Symbol GL. FSN 9150-261-8297 will get you an 8-ounce tube. Wipe off any excess lube.

Then screw up this connector with a firm but gentle touch. If threads start to cross—back out fast, and come in slow and easy.

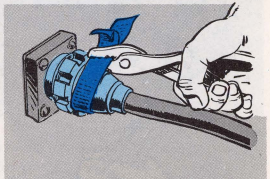
1. Aim the ring so it screws on straight, and turn it up to a firm, fingertight seat.




2. Then take the ring up another ⅛-turn—no more—with an adjustable spanner.



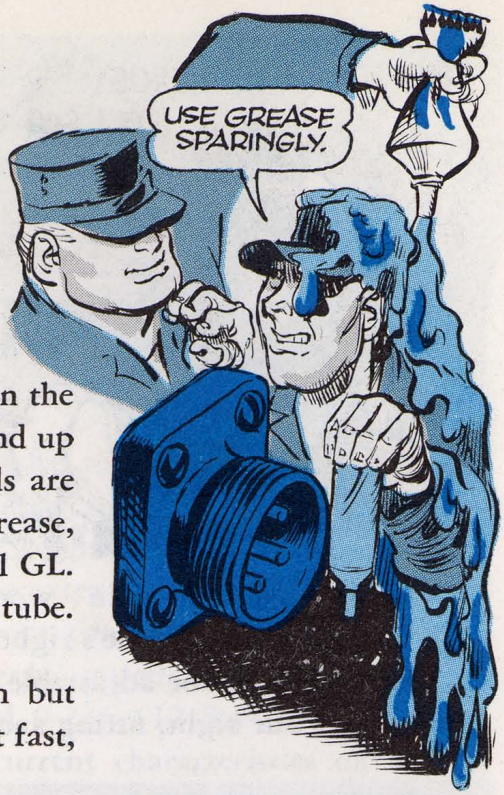
3. To seal the connection, turn the sleeve up to a firm, fingertight seat on the ring.



4. Then take the sleeve up another ⅛-turn—no more—with a strap wrench, or a strip of webbing and pliers.

Now you've got what you need—a waterproof seal with the rubber grommets under just enough pressure to prevent leaks.

# *but gentle*

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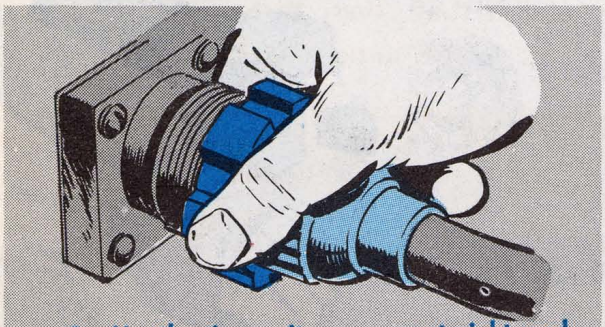

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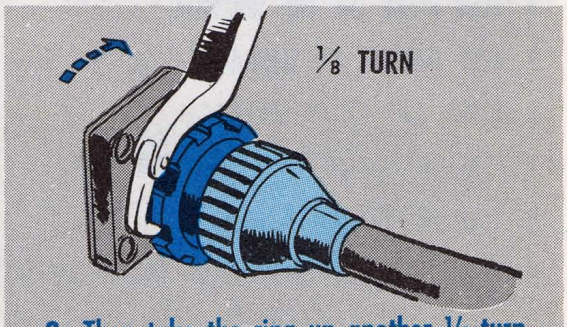
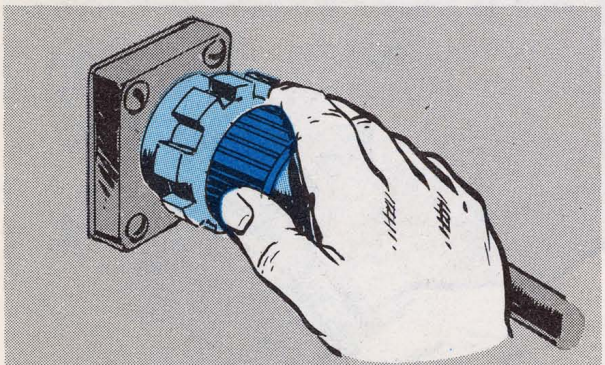



2. Then take the ring up another 1/8-turn—no more—with an adjustable spanner.



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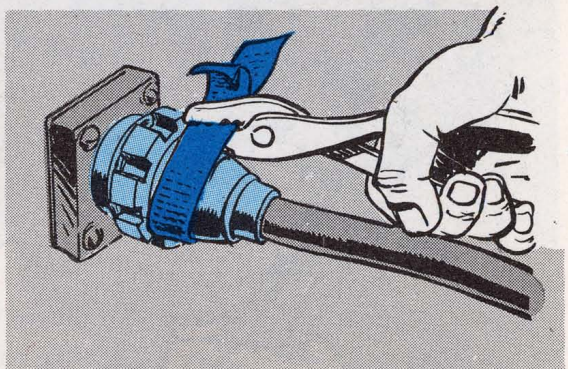

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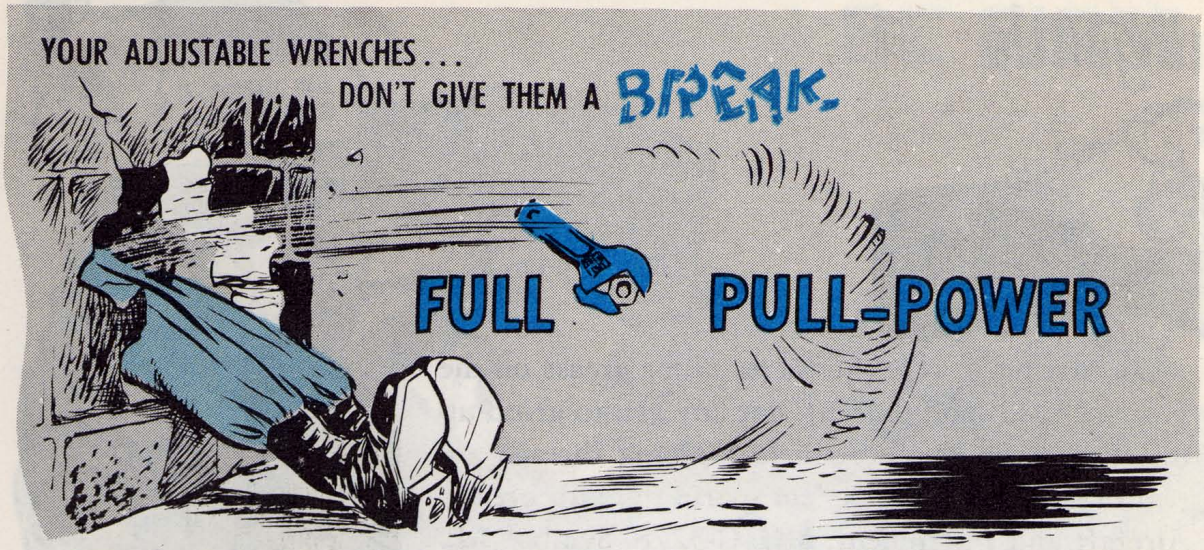
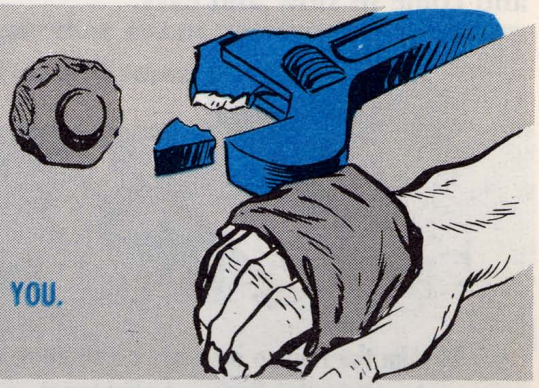
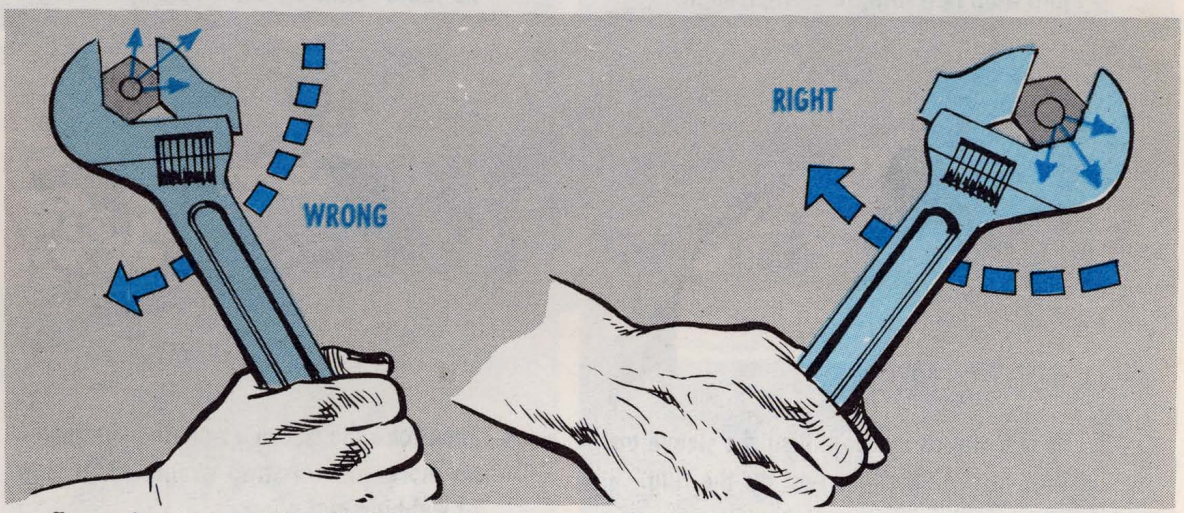



Whether thinkin', doin', wonderin', or just messin' around, there's usually two ways to do a job. One's right, the other's wrong.

The same goes for adjustable wrenches, 'cause there's a right and wrong way to use 'em. The right, fitting and proper way means:

1. LESS WEAR ON THE WRENCH.
2. LESS DANGER OF SLIPPAGE.
3. MORE AND SAFER LEVERAGE.
4. LESS CHANCE OF DAMAGING THE NUT.
5. TIGHTER FIT, IF NEEDED.
6. LESS HUFFING, PUFFING AND KNUCKLE-BUSTING FOR YOU.

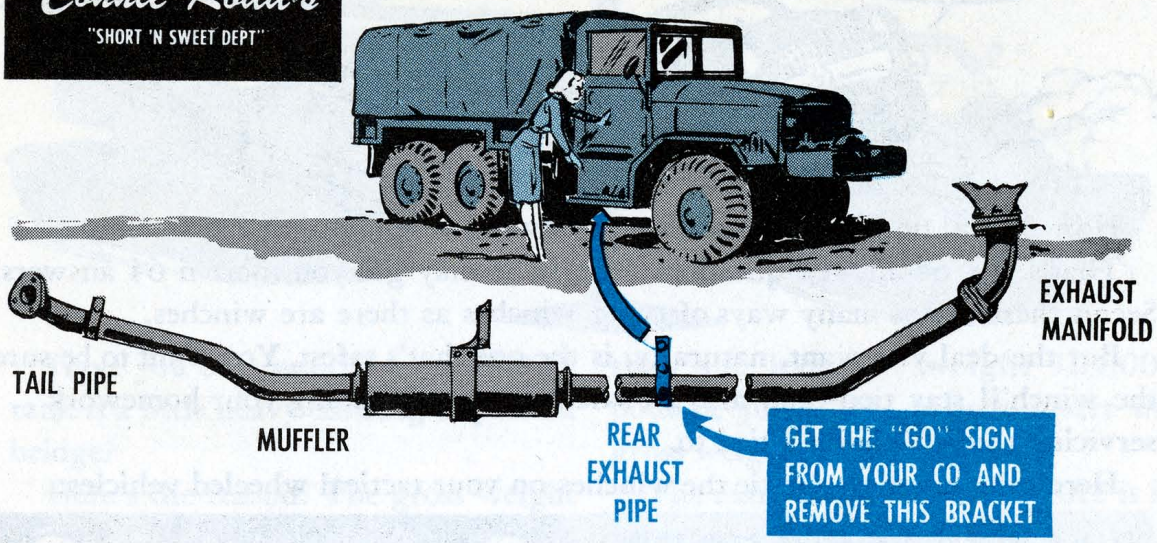





In other words . . . adjustable wrenches **shouldn't** be used so's the "pull" or "force" is beamed on the adjustable jaw. It's the stationary jaw that's rigged to take the heavy stuff.

Connie Rodd's
"SHORT 'N SWEET DEPT"

# Yank the bracket




Vibration can score a knockout on your vehicles.

So, before your G742-series trucks get deadlined with cracked exhaust manifolds, take a look underneath 'em.

If you find the rear exhaust pipe supported by a bracket, there's likely to be trouble. These brackets were supposed to be removed, like it says in MWO Ord G742-W28 (25 Sept 57), leaving just the bracket that supports the tailpipe. Seems, though, some vehicles are still wearing the rear exhaust bracket.

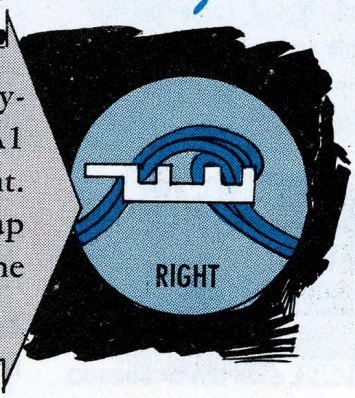
1 Removing the rear exhaust bracket, FSN 2990-737-3080, was changed to a depot job by Change 1 (12 Feb 59) to the MWO. So, before **you** take it off, you have to get the "go" sign from your CO.

2 The MWO mentions only vehicles with a tailpipe bracket that wears FSN 2990-736-8636. Your vehicle may have an older bracket that goes by FSN 2990-752-1760 or FSN 2990-706-1132. But, no matter which tailpipe bracket you've got, that rear exhaust bracket gets yanked.

# Give it a lacing

Mighty annoying the way the carrying strap on some M62A1 and M63A1 binocular cases goes out of adjustment.

But it's a real snap to adjust the strap right. All you have to do is lace the strap through the buckle this way.



## Winch safe tie

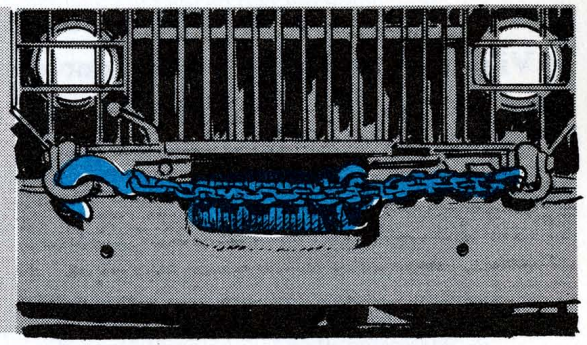
How do you tie a winch so she won't unwind when you hit the road?

That's the 64-answer question. Fact is, it may get you more'n 64 answers. Seems there are as many ways of tying winches as there are winches.

But the deal you want, naturally, is the one that's safest. You want to be sure the winch'll stay tied—and also be safe when you're doing your homework . . . servicing the vehicle she's tied to.

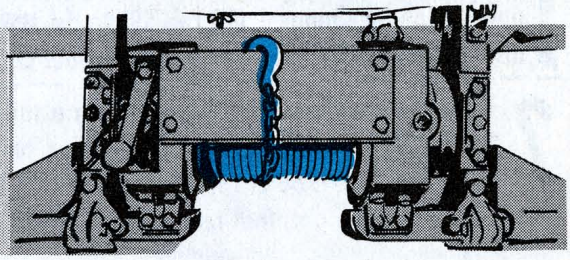
Here's the safest way to tie the winches on your tactical wheeled vehicles:

1. Vehicles of 2½ tons and up (G742, G749, G744, and G792)—Bring the cable chain and hook **above the bumper** and put it through the left lifting shackle (Driver's side), then take it across the bumper and hook it into the right lifting shackle. To make sure it stays hooked, turn the winch slowly until it's tight.

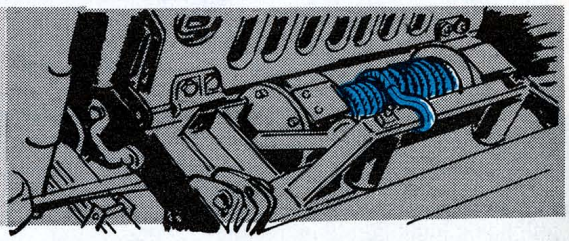


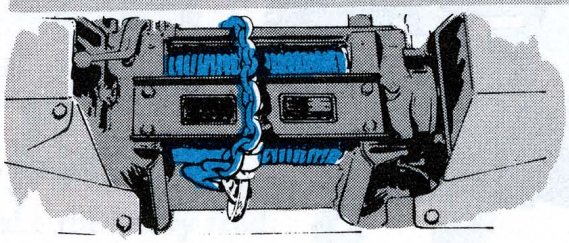
If the hook and chain won't pass through the shackle because of damage . . . or because they're just too big . . . take out the shackle pin and put the shackle over a chain link and put the pin back.

2. Vehicles of the G741 series, ¾-ton—After winding the cable on the drum, hook the cable end to the top tension channel (plate) above the winch, then turn 'er slowly to tighten.



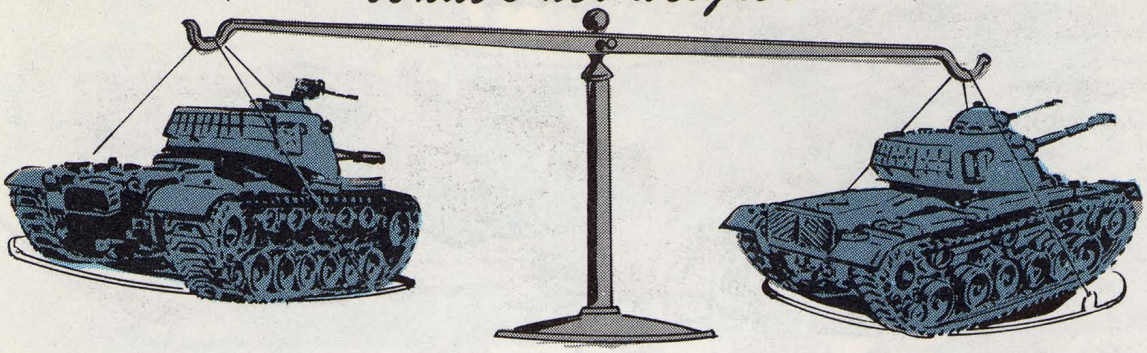
3. Vehicles of the G740 and G758 series, ¼-ton—After winding the cable on the drum, hook the cable end to the cable guide roller bracket (frame assembly), then turn until all slack's taken up.





If you're just moving a few feet from one hitch to another, it's OK to use a temporary hookup where it'll save time. But this is strictly a temporary deal—not for road travel.

## What's her weight?



Have you ever noticed your M48A1 tank is a little heavy crossing a ponton bridge?

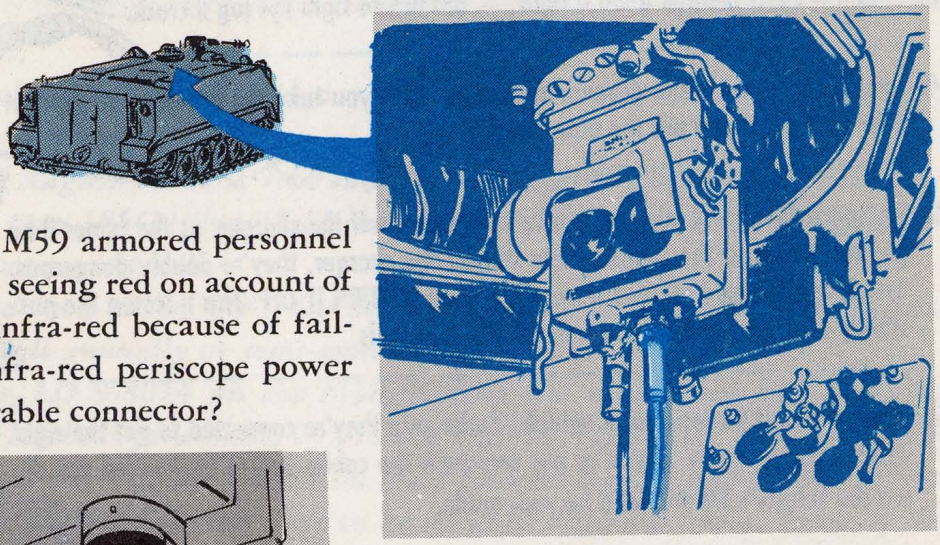
Here's the reason: The gross weight of 99,000 pounds given in TM 9-7012 (30 Aug 54) is correct for the M48 and M48C tanks, but not for the M48A1. Its weight is not listed in that TM.

The M48A1 is a little bit heavier than she looks. It weighs 104,000 pounds, just 1,000 pounds under the gross weight of the M48A2.

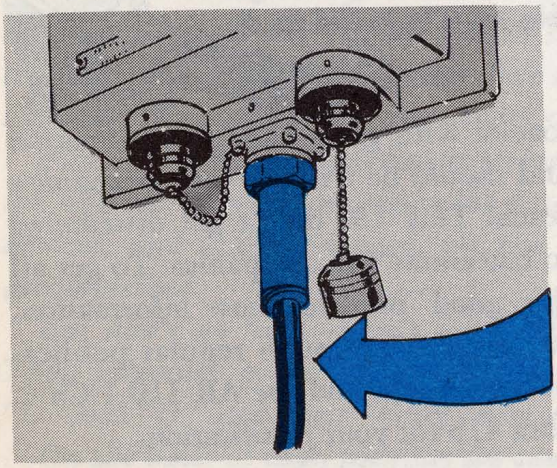
The extra weight of the M48A2 is in its front compensating idler castings, rear exhaust grill doors, and more fuel.

TM 9-236 (12 Sept 60) gives you the current characteristics on all the M48 series tanks.

## To see infra red

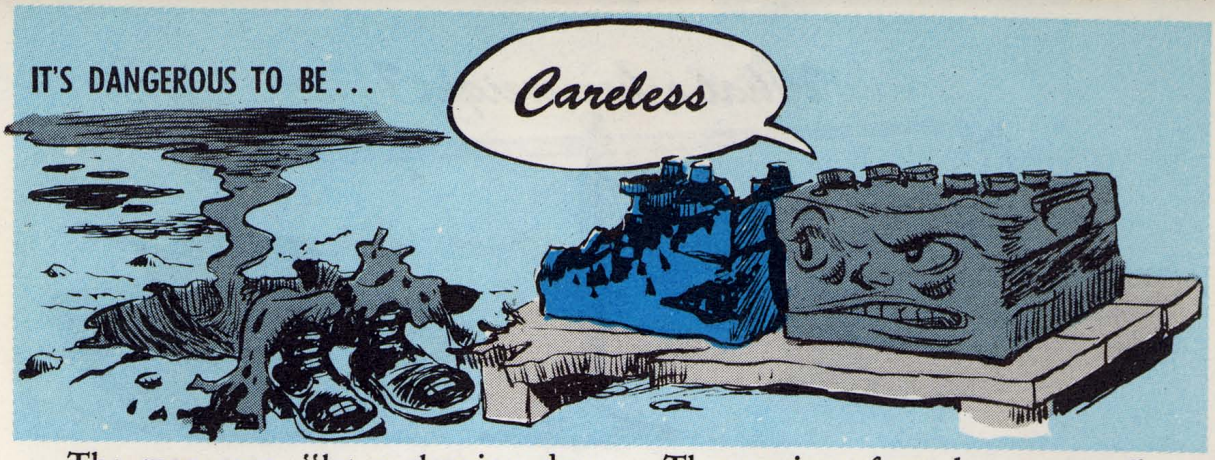


Any of you M59 armored personnel carrier jockeys seeing red on account of you can't see infra-red because of failure of your infra-red periscope power feed cable or cable connector?



Well, cool off and get back into the visible light band. Here's good news for you.

As of now, Harness, Wiring, Ordnance Part No. 7354754 is authorized for issue to —20P users. It's at the supply depot if you need it. This little gem comes with the FSN 2590-735-4754.




The man says, "let a sleeping dog lie." The same holds with the hydrogen gas escaping outta your batteries. Don't do anything foolish that'd make this stuff flare up.

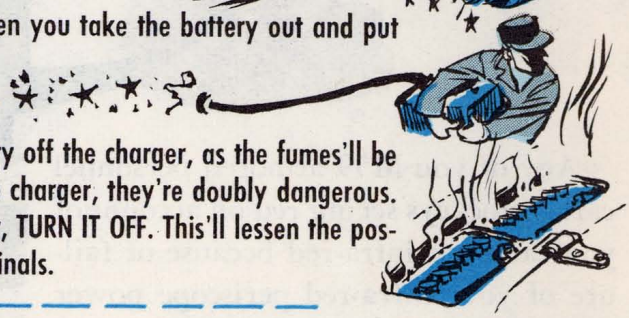
The teeniest of sparks can set off an explosion that could make the battery act like a bursting hand grenade.

Here are some tips for every battery handler to memorize.

1. Never, no never, light a match or smoke near them.

2. Keep a watchful eye on battery cable wear. They can get chafed off until a short-circuit is started and has a sparkin' good time.

3. Keep the cable clamps good'n tight . . . but not so tight the lug'll crack.



4. Always . . . remove the ground cable first when you take the battery out and put it on last when you put the battery back in.

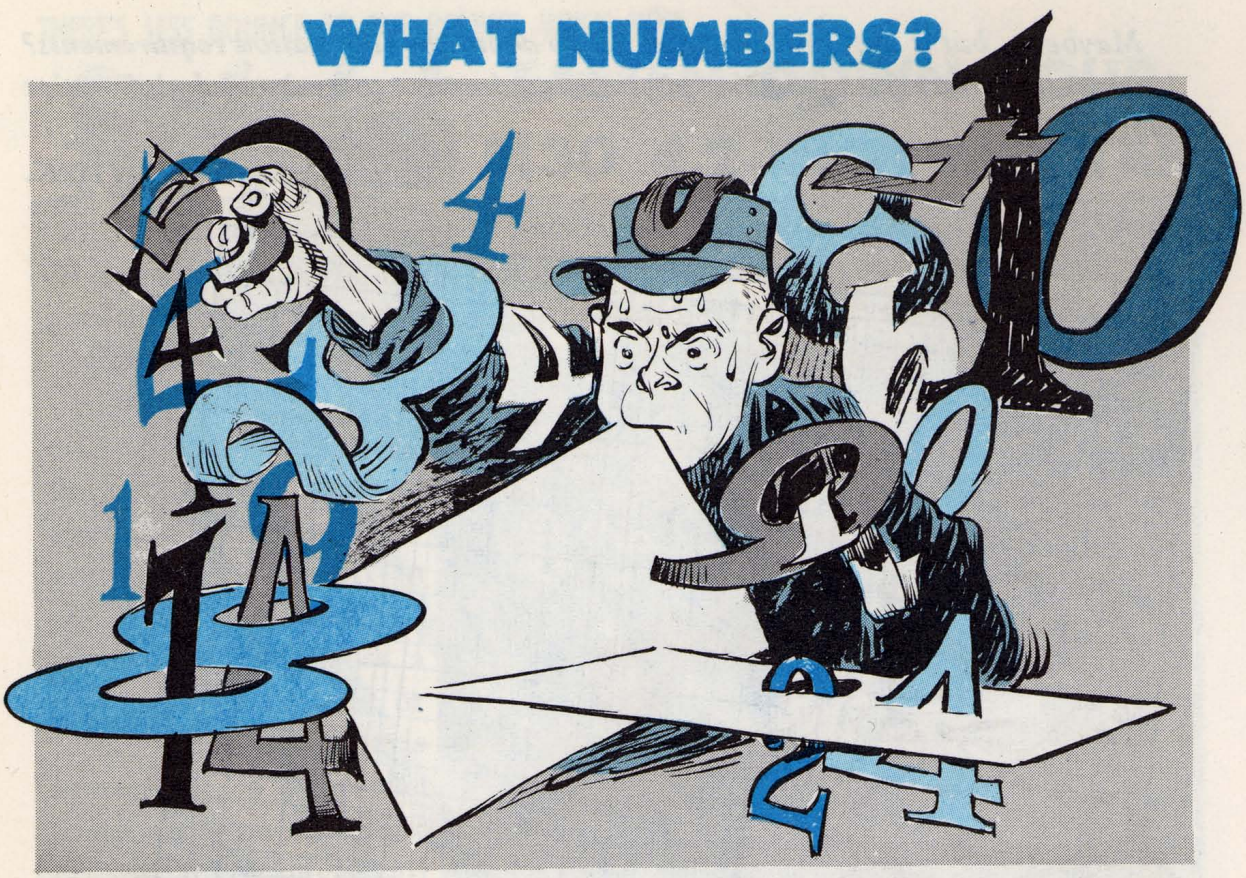
5. Be 'specially careful when you take the battery off the charger, as the fumes'll be greater. Natch, if the batteries are still on the charger, they're doubly dangerous. Before unhooking batteries from your charger, TURN IT OFF. This'll lessen the possibility of a spark when you unhook the terminals.

6. When you put batteries in a vehicle, make sure they're connected to get the right voltage and polarity. If you're not sure how the cables are to be hooked up, dig out the vehicle's TM and let it be your guide.

Finally, at the first sign of an overcharged battery—drinks too much water (more than 1 ounce a week per cell)—get your support unit to check and reset the generator regulator. The regulators should be set to TM specs . . . no more.

TM 9-6140-200-15 (July 58) is loaded with good battery information and should be within every mechanic's reach. This TM didn't get distributed to battalions and companies. To get all this good "need-to-know information," requisition it through regular publications channels and use AR 310-1 Ch 4, para 41b for your justification.

# WHAT NUMBERS?



*Dear Half-Mast,*

*Here's a tricky one I want to lead you through, by the numbers—and that's the problem, the numbers.*

*TM 9-2810 (August 1958) is "the law" on maintaining tactical vehicles, and it says right in para 18b(2) that "lubrication will be accomplished in accordance with the lubrication order."*

*Now, go and look at the LO's. On all of 'em there're a whole batch of lube functions that fall annually or semi-annually.*

*For example, LO 9-8014 on the M38A1 Jeep has nine items like that. LO 9-2320-210-10 on the Hydra-Matic 2½-tonners has 16, LO 9-8022 on the straight-stick 2½-tonners has 16, LO 9-8028 on the 5-tonners has 20, and LO 9-8030 on the ¾-tonners has 10 items that have to be done at different times. Some of the items are time-scheduled, regardless of mileage.*

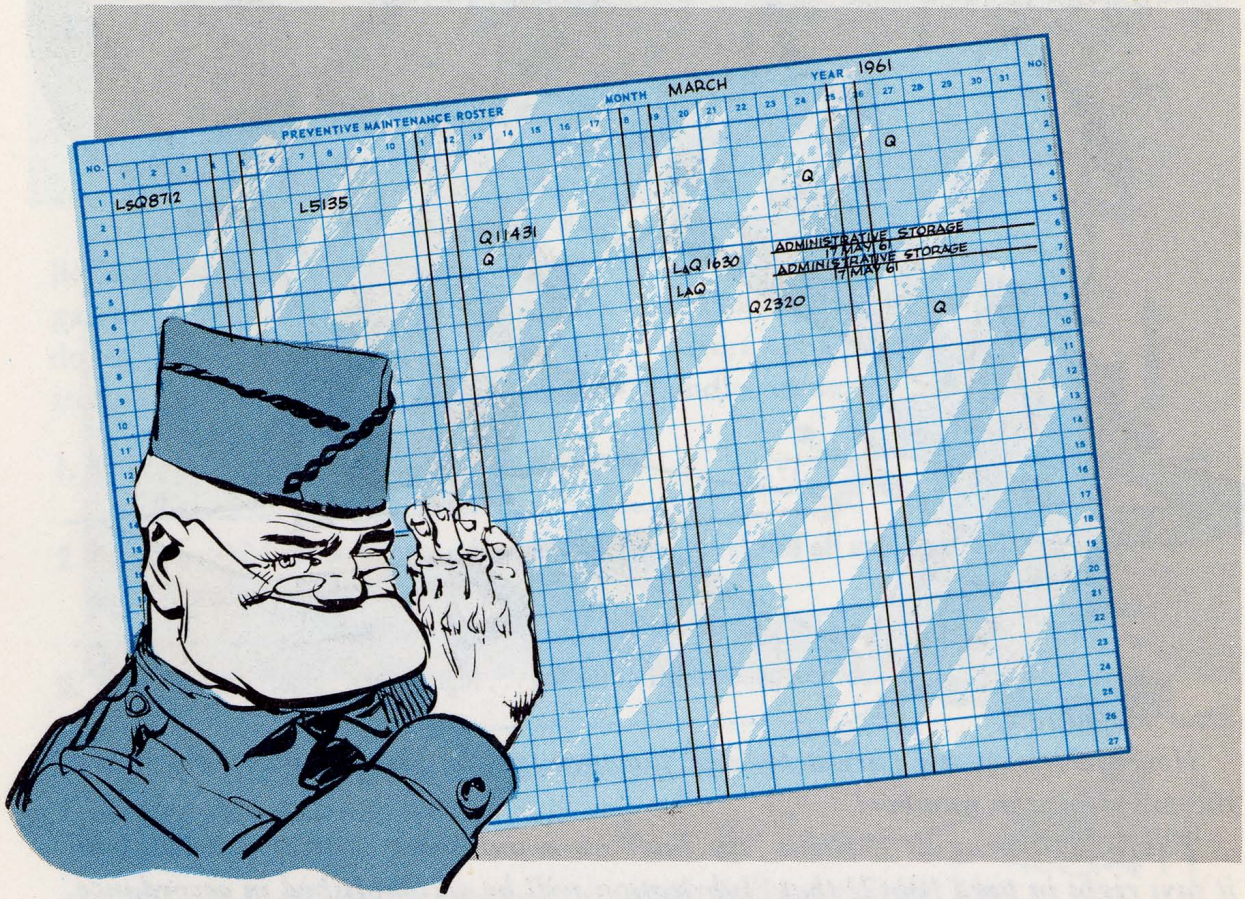
*Fine. We have a requirement levied by directive publications. We solve it in the obvious way—by marking the L-services: L for a plain lube job, LS for semi-annual, and LA for annual, on the DA Form 460. Problem solved, mission accomplished.*

*But don't go 'way—here's where the nitpickers come in to gum up the works. They solemnly point out that right on the outside of DA Form 460 it shows "L" and "Q" and says: "Only these authorized symbols to be used."*

*On the basis of that, they say we can't use LS and LA.*

*Maybe so, but if not, just what can we do about the lubrication requirements? It seems like a sacrifice of a major physical requirement to a minor administrative snag.*

*MSgt H. K.*




Dear MSgt H. K.,

You're absolutely right—all the way around — for right now. In order to meet the time-phased lubrication jobs, you should keep track of which L is what, else you're violating TM 9-2810 and the LO's. Your system of marking the L's is the best and easiest way of doing it.

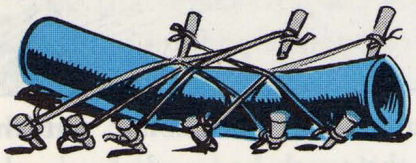
However, your problem should be solved when a new Army lube record form is available. It'll solve this problem by letting you know what is due next.

If you're still plagued with the nitpickers who object to using different symbols, here's another way to beat 'em. First make sure your mechanics aren't color-blind. Then latch on to a red pencil, a blue pencil, and a black pencil (or any other set of three easy-to-read colors). Use a different color for each of the different L's and you're still using only authorized symbols.

That should satisfy the most nibby nitpicker who is worried about what DA Form 460 says—and should let you get on with the lubrication of equipment that has to roll.

Half-Mast

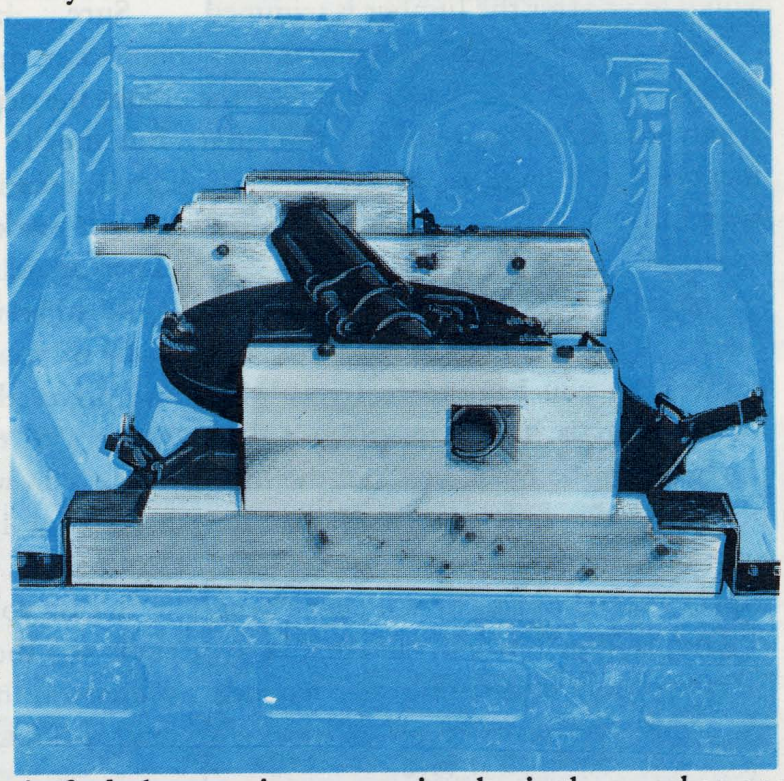
THERE'S LESS BOUNCE TO THE BOUNCE WHEN YOU



# FASTEN DOWN YOUR M30 4.2-INCH MORTAR

A ¾-ton truck's not made so's when you ride in it you feel like you're floating on a cloud. And if you think you get bounced around, you oughta change places sometime with the equipment you haul around on the bed of the truck.

But, when it comes to lugging the M30 4.2-in mortar, there's a way to keep the mortar, standard assembly and what-have-you from flying off in 60-11 different directions when you run across a rough stretch of road or field. What you need is something to keep the components on the truck bed—what you might call a hold-down device. And by working with your support unit, you can have just that for each truck in your outfit.

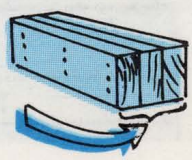


The first thing you do is find the guy in your unit who is the number one scrounger. His job is to come up with some of the material you need. Here's how it stacks up.

**List of Material for Hold-Down Device**

| Lumber: | Hardware: |
|---|---|
| 1—4-in x 12-in x 5 ft | 4—¾-in x 18-in machine bolts including nuts |
| 1—4-in x 6-in x 2 ft | 2—¾-in x 16-in machine bolts including nuts and washers |
| 2—6-in x 6-in x 2 ft | 4—½-in x 3-in machine bolts including nuts and washers |
| 1—6-in x 6-in x 5 ft | 2—¼-in x 7-in machine bolts including nuts and washers |
| 1—2-in x 4-in x 4 ft | 2—¼-in x 6-in machine bolts including nuts and washers |
| 1—1-in x 4-in x 26-in | 4—¼-in x 1-in machine bolts including nuts and washers |

As you can see, one of the big items is lumber. Maybe you were like to flip when you saw that you need a chunk that's 6-in x 6-in x 5-ft. Don't get shook. If you can't find that big a piece, use smaller ones and build up to the bigger size.



Speaking about size . . . the dimensions for the lumber are for untrimmed stock. In other words, 6-in means just that—not 5½-in—which is about what you'd have after the lumber is trimmed.

So maybe you can't get untrimmed lumber. OK . . . go ahead and use the trimmed stuff. Don't forget, tho, that means you'll have to make other dimension changes as you whip things together.

Something else about dimensions . . . the truck's bed is not made to close tolerances. So you have to feel your way along. That is, f'rinstance, don't drill the holes in the truck bed, cut the lumber, drill the holes in the fabricated parts and then assemble the pieces—and expect everything to fit with no sweat.

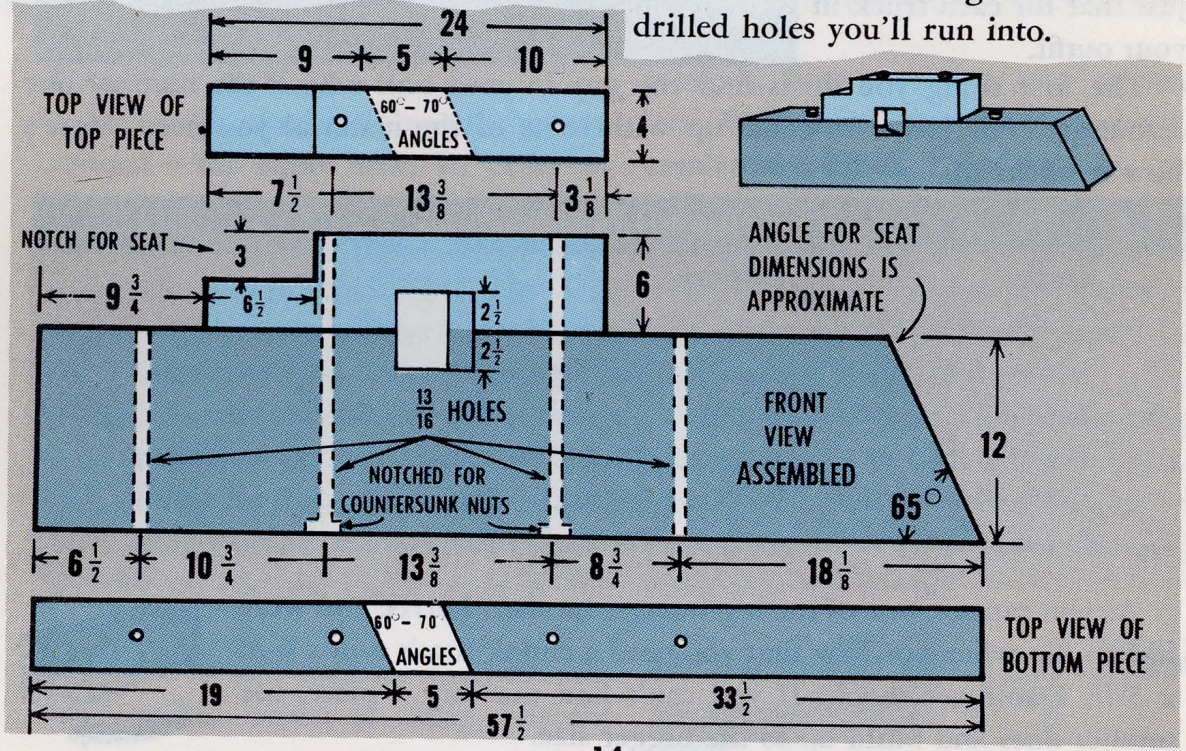
Things don't work out that way. What you do is assemble the wooden components, drill the holes, put the parts on the truck bed and then make the marks for the holes that get drilled in the truck.

Sure . . . as you read on you'll come across a drawing that shows dimensions for drilling holes in the truck bed. But they're there mostly to give you a good idea where things go. Maybe they'll work out exactly for your truck. Then again . . . maybe not.

Now leave us proceed. Here's how some of your lumber is cut up to make the pieces that support the cap end of the mortar tube.

It's 4-in wide, right? If you can't get a piece of lumber that wide, use two 2-in pieces . . . and bolt 'em together.

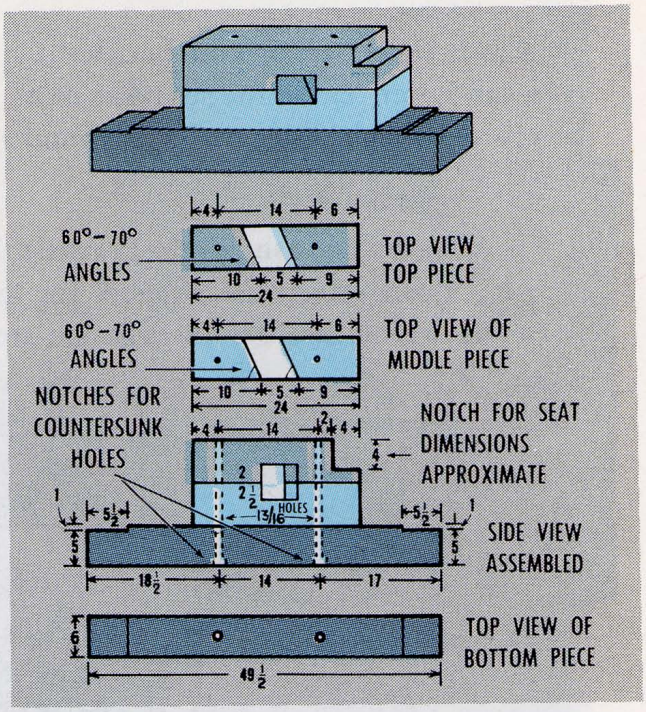
In case you're wondering, the dimensions for the holes are measured from center-to-center. That goes for all the drilled holes you'll run into.



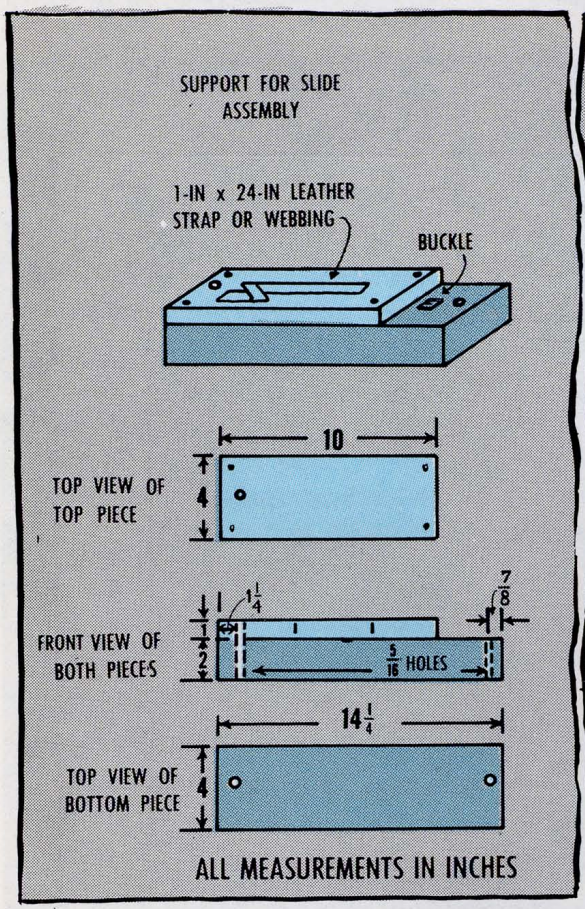
See that notch for the seat and the angle the lumber is cut on to make way for the seat brace. That's another case where the measurements can't be figured right down to the degree or 1/16th of an inch. You might have to make another pass with the saw to get the right cuts for your truck.

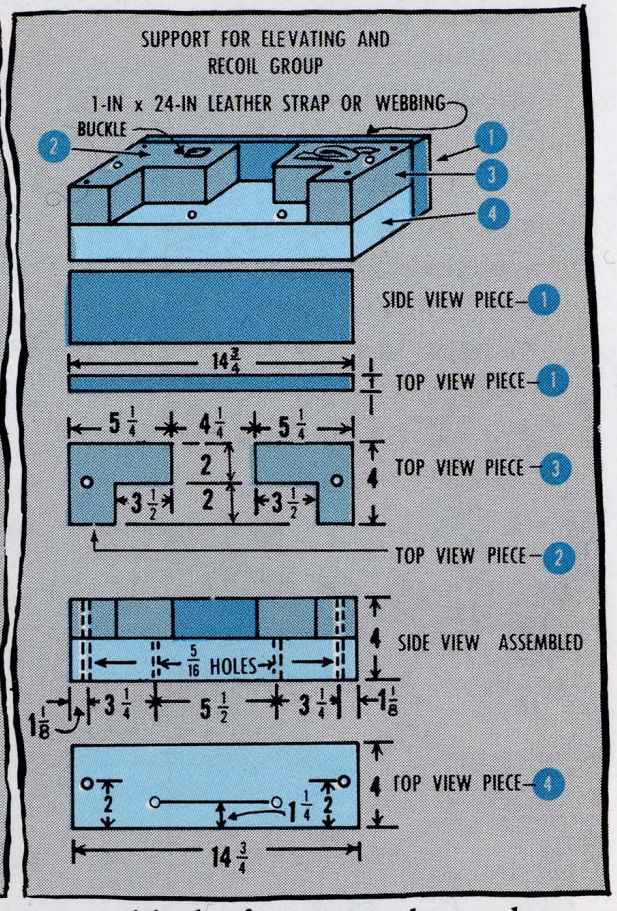
This drawing shows the parts used to hold down the muzzle end of the tube.

Watch yourself with those notched angles. The same goes for the support for the cap end. If you make the angles much more'n 30 degrees, it could mean the tube'd hit the wheel well.




Here's how the parts're set up for the standard assembly.

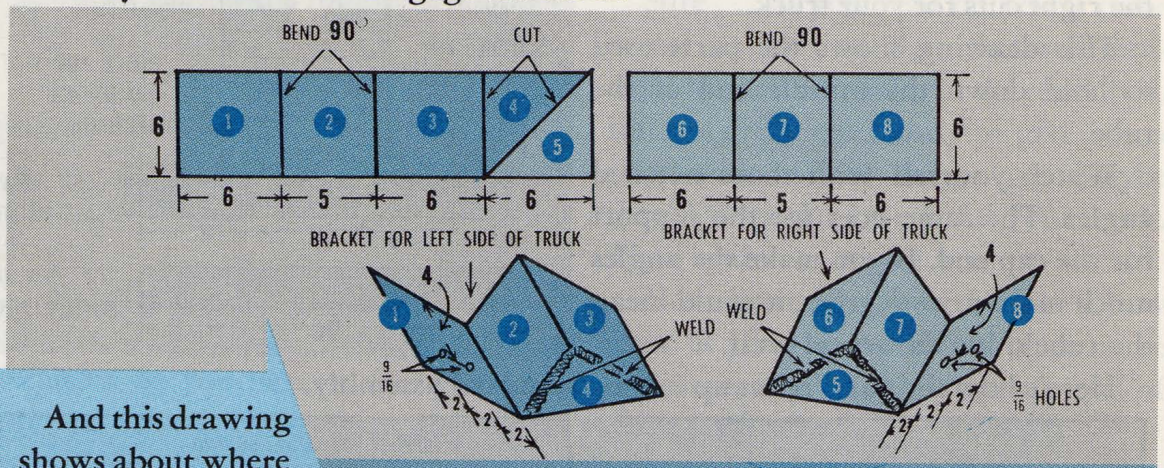


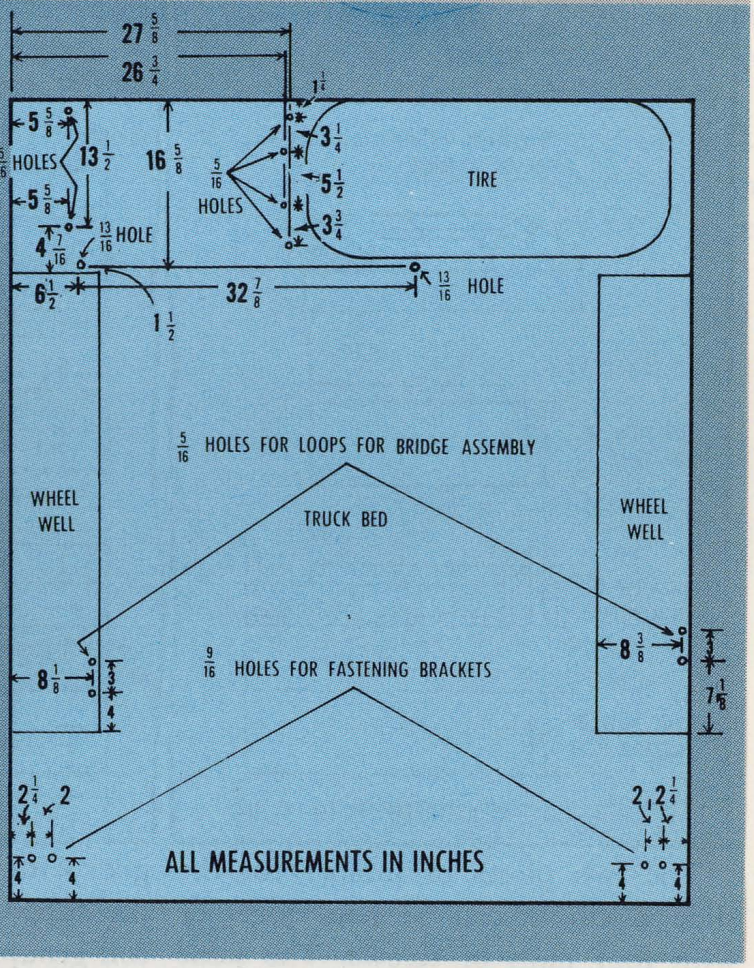

The two pieces of lumber for the slide assembly can be held together with four nails or screws. The same goes with the four parts that make up the support for the elevating and recoil group.

About those straps and buckles . . . you can fasten 'em to the supports most any way—with staples, nails or round-head screws. If the straps and buckles are hard to come by, remember that two pieces of rope tied together will work pretty good.

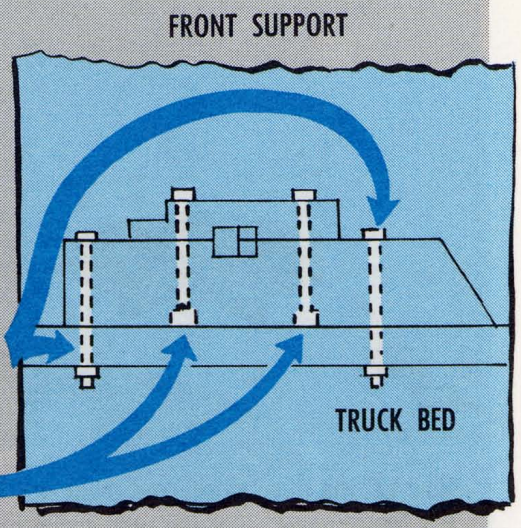
This drawing shows the brackets that — along with the tailgate when it's closed—keep the support for the muzzle end of the tube in place. They're made from 10-gage flat stock.




And this drawing shows about where the holes go for the bolts to pass through from the different supports. Those loops mentioned for the wheel wells can be "U" bolts, drawer handles or something that you can whip up to do the job.



Once you have everything made—and it all fits—here's how you put it together.




First of all . . . you want to stick the nuts in the countersunk holes on the bottom of the lower piece for the front support. Then flip it over (making sure the nuts don't fall out) and line up the two outer holes with the ones in the truck bed. Next . . . put the 16-in bolts in the outer holes and have some guy go under the truck to tighten the nuts. Stick the 18-in bolts in the two center holes and tighten them.

Another way to handle the two pieces for the front support is to bolt them together with the two center bolts and then put the support on the truck bed . . . line up the outer holes . . . put the bolts in . . . and go to work on 'em with one guy in the truck and another under it.

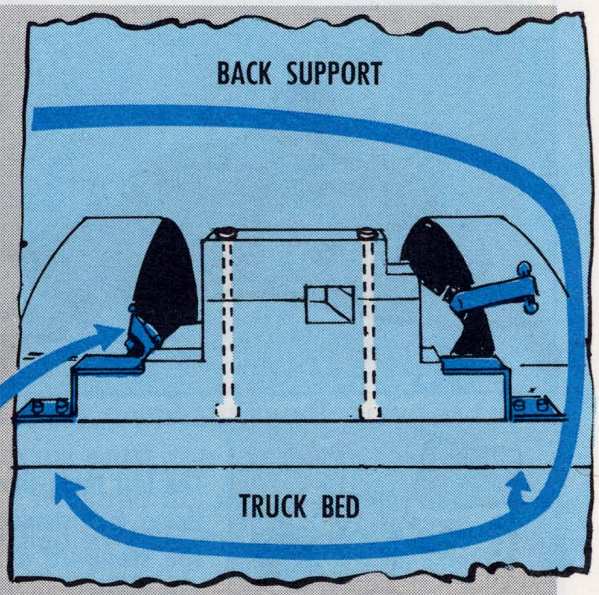
Now do you get the idea of those countersunk nuts? Right. You can fasten down the top piece—or loosen it—without touching the nuts. If the two center holes were drilled through the truck bed, it would mean going under the truck everytime you wanted to take off the top piece.

'Course . . . the countersunk holes want to be only a hair bigger'n the nuts. If they're too big, the nuts'll spin around when you tighten them. The same goes with the back support—as you'll see.

The next thing you can do—although the order in which you put things together makes no nevermind—the next thing is to fasten the brackets. No sweat here. Just run the 3-in bolts through and tighten the nuts from the bottom of the truck. Make sure the welded pieces face the front.

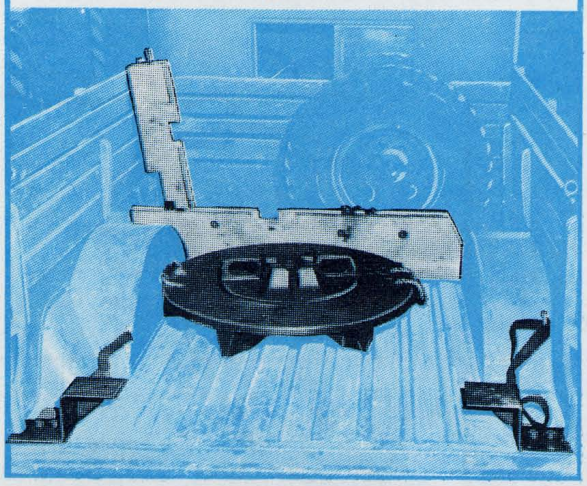
Now you can put in the supports for the standard assembly. This is another easy deal—with the 6-in and 7-in bolts going through the holes and the nuts getting tightened from under the truck.

Next . . . put the "U" bolts, handles or whatever you're using in place on the wheel wells. This is where you use the 1-in bolts if you're putting on handles. These also get tightened from underneath.

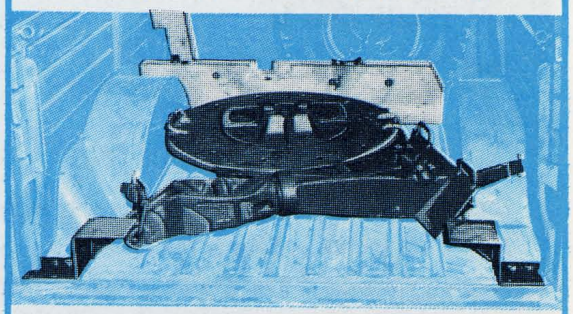



Now you've got all the parts assembled that can stay in the truck all the time. That means you can put the mortar in the truck and take it out on the road and into the boondocks for a real workout.

The first part that goes on is the mount.



Next comes the bridge assembly. You keep this from getting all shook up by running the

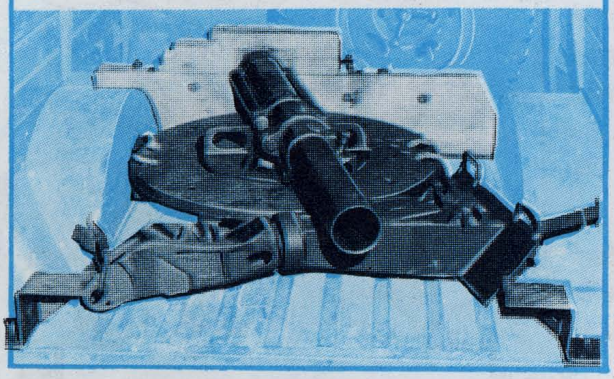


straps (unless you're using rope) through the handles on the assembly and the loops on the wheel well. Tighten the straps.

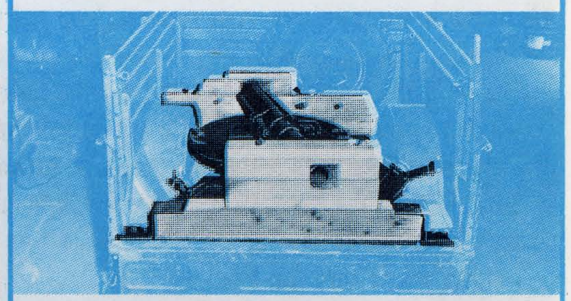
Now get the three pieces that make up the back support. You can put this together like you did with the front support. Put the nuts in the countersunk holes in the bottom piece . . . slide it under the brackets . . . line up the middle piece with the holes in it and the bottom piece . . . and then set it down on the middle section.

Next . . . lay the mortar in the notches in the front and rear supports and put on the top piece of the back support. Seeing's how the tube also lies in the groove in the rotator assembly, you'll have to turn the assembly so's the groove lines up with the notches. Now you can run the 18-in bolts through the holes. Then tighten the bolts. If the mortar is real loose in the notches, try wrapping some leather around the tube.

Another way to handle the rear support is to assemble all three pieces outside the truck . . . put the mortar in the notch on the front support and the groove in the rotator assembly . . .

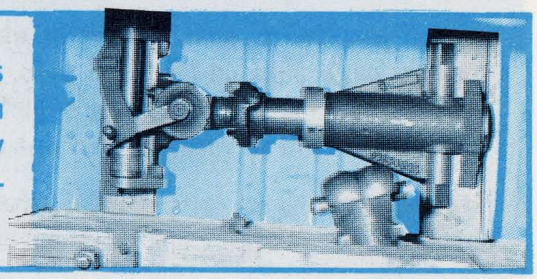


. . . and then slide the assembled rear support into place on the truck.



The muzzle end of the tube'll go into the rear support notch as you slide the support into the brackets. Now close the tailgate.

The last thing that needs doing is fastening down the standard assembly components on the supports with the straps.



# ARMY AIRCRAFT

# SHADES OF CHICKASAW

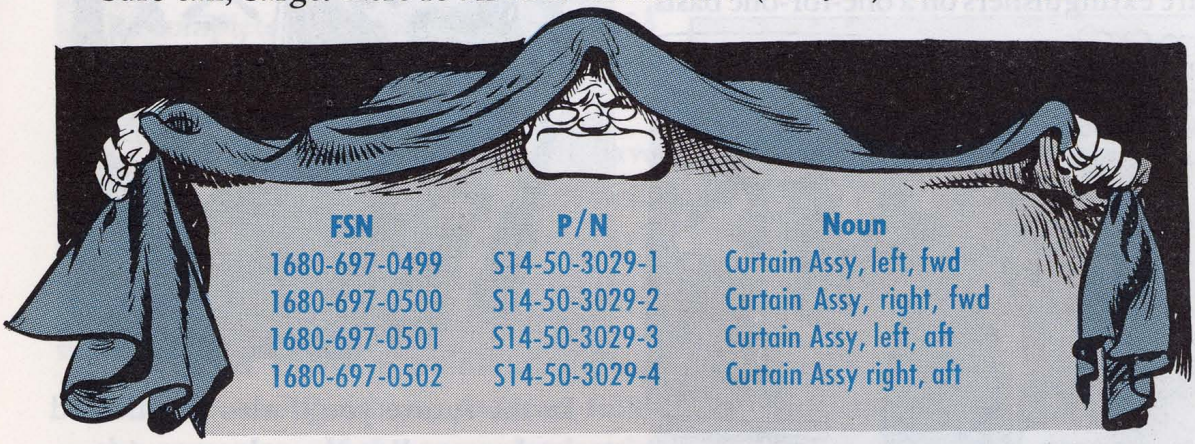
*Dear Half-Mast,*

*We are unable to locate the FSN for black out curtains for our H-19D. Could you give us a reading on this item?*

*SFC L. L. S.*

Dear Sergeant L. L. S.,

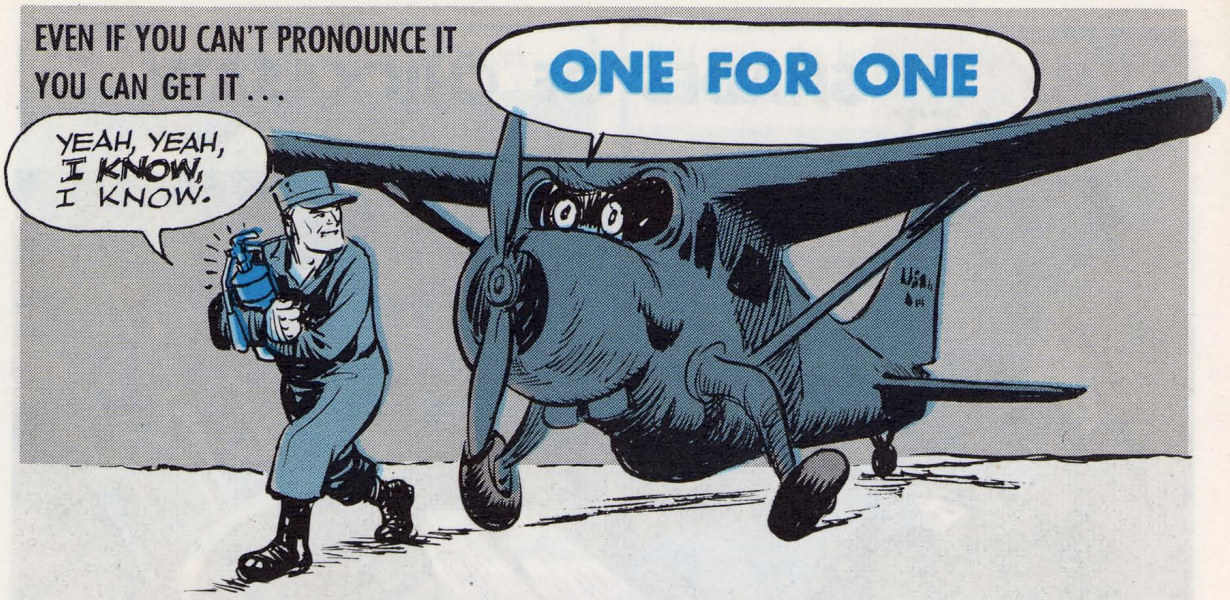
Sure can, Sarge. Here're all **four** Chickasaw (H-19D) curtain numbers.



| FSN | P/N | Noun |
|---|---|---|
| 1680-697-0499 | S14-50-3029-1 | Curtain Assy, left, fwd |
| 1680-697-0500 | S14-50-3029-2 | Curtain Assy, right, fwd |
| 1680-697-0501 | S14-50-3029-3 | Curtain Assy, left, aft |
| 1680-697-0502 | S14-50-3029-4 | Curtain Assy right, aft |

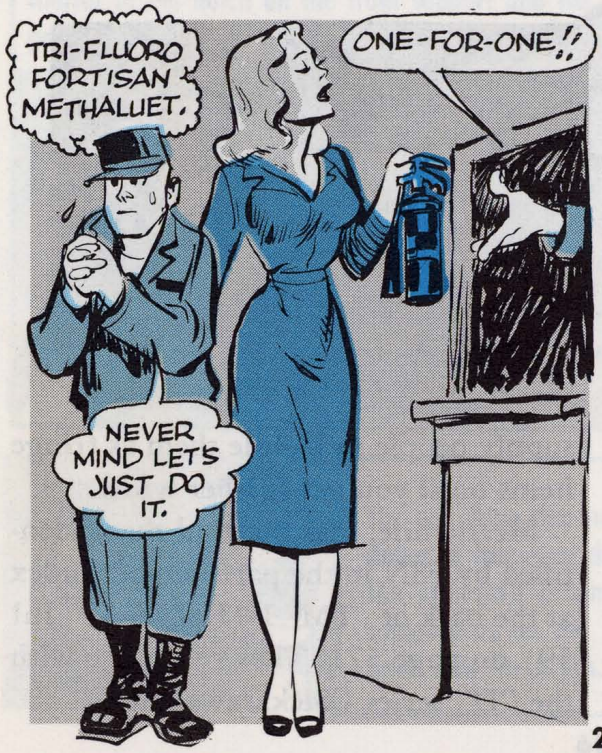
This 1680 Federal stock class belongs to TC and FSN 1680-697-0499 is now listed in TM 1-1H-19A-4-34P (14 Oct 60). But the right forward and both aft curtains aren't listed because there hasn't been enough demand to make them stockage list items. So tell your supply people to handle them as fringe items until you get further word.

Meanwhile, you can find them identified by FSN in the part number index at the back of TM 1-1H-19D-4 (Jul 59) on page 571. They're for use with the "D" series Chickasaws only.




Mono-methane-bromo . . . bromo-troro-thane . . . tri-bromo-kane . . . bromo-seltzer-tri-methane . . . aw nuts! The name seems harder to remember than the simple supply and maintenance requirements for your new fire extinguisher.

The supply story, short and sweet, is that you can now turn in the Type A-20 (FSN 4210-288-8268) aircraft fire extinguishers on a one-for-one basis.




In return you get the new mono-bromo-tri-fluoro-methane (whew!) extinguishers under FSN 4210-555-8837 from Engineer supply. Don't try to pronounce it—just do it!

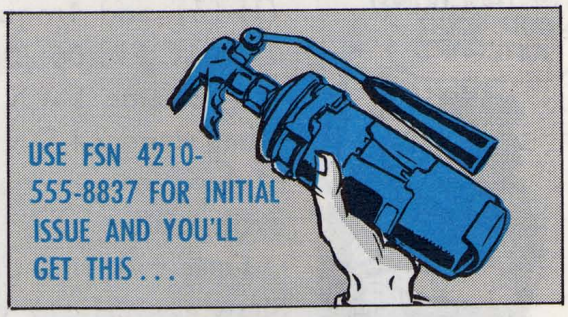
In the future you'll **also** be allowed to exchange all your carbon tet (up to ½ lb or 1 qt) and $CO_2$ (up to 5 lb) extinguishers for this new one. Meanwhile, DA Circular 700-3 (27 June 60) says that **only** empty or damaged A-20 extinguishers for Army aircraft go back to Engineer supply **right now**. You

keep the ones that're serviceable until you need a replacement . . . and you hold on to the carbon tet and $CO_2$ types of extinguishers you may have on hand until more instructions come out.

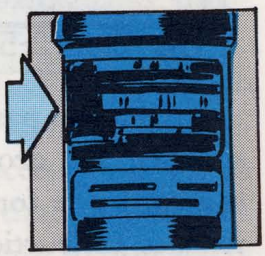
Once you get your first monobromotrifluoromethane ($CF_3Br$) extinguishers, please don't use FSN **4210-555-8837** again. You're supposed to hold onto the bracket, cap and pistol grip—detach the used or underweight cylinder—and exchange **only** the cylinder with the Engineers. To get a new, fully charged cylinder replacement you ask for FSN **4210-708-0031.**

Picking up the FSN 4210-555-8837 printed on your cylinder nameplate will bring you the whole extinguisher —complete with bracket, cap and grip. Since the fittings are nonexpendable, it'll be confusing explaining how come you got an extra set or two hanging around on the books. Besides, if you have to worry about consumer credits, the complete extinguisher costs $24.53 each, while the replacement cylinders only hook you for $18.03.

Eventually the Engineers will have recharging kits available which will allow them to reissue you the same cylinders. At that time the cylinders will also be classed as nonexpendable.



When it comes to maintaining these monobromotrifluoromethane extinguishers, you can follow the instructions on the nameplate. If the nameplate's missing, tell your support about it. Same goes for a broken seal . . . which can only be replaced by the Engineers after an inspection.



Another thing . . . there's going to be a leetle bit of a problem putting these new extinguishers and their brackets in the same locations you used for the A-20's in both the Sioux

(H-13) and Iroquois (HU-1A). So check TMC message TCMAC-EPI-06-2042 (June 60) for help on installing them.

The same TWX spells out the fix to use on most of the other standard DA aircraft. In general, the problem's more of how to put on the new bracket than relocating the extinguisher.

Only two aircraft are **not** covered by this TWX. For the Shawnees (H-21) you follow TM 1-1H-21C-1030 (23 Dec 60); while the Bird Dogs (L-19) are covered by still another set of instructions now being put together.

# USE THE WRITE-IN

A lot of general type aircraft TM's may not be getting down to you unless your local publications stockroom is doing right by DA Form 12-5. This form sets up the Initial Distribution for aircraft pubs.

**REQUISITION FOR INITIAL DISTRIBUTION OF PUBLICATIONS AND BLANK FORMS**
*(ARMY AIRCRAFT PUBLICATIONS FURNISHED IN QUANTITY DETERMINED BY USING AGENCY)*
*(AR 310-2)*

TYPE OF REQUISITION
☐ INITIAL
☐ CHANGE

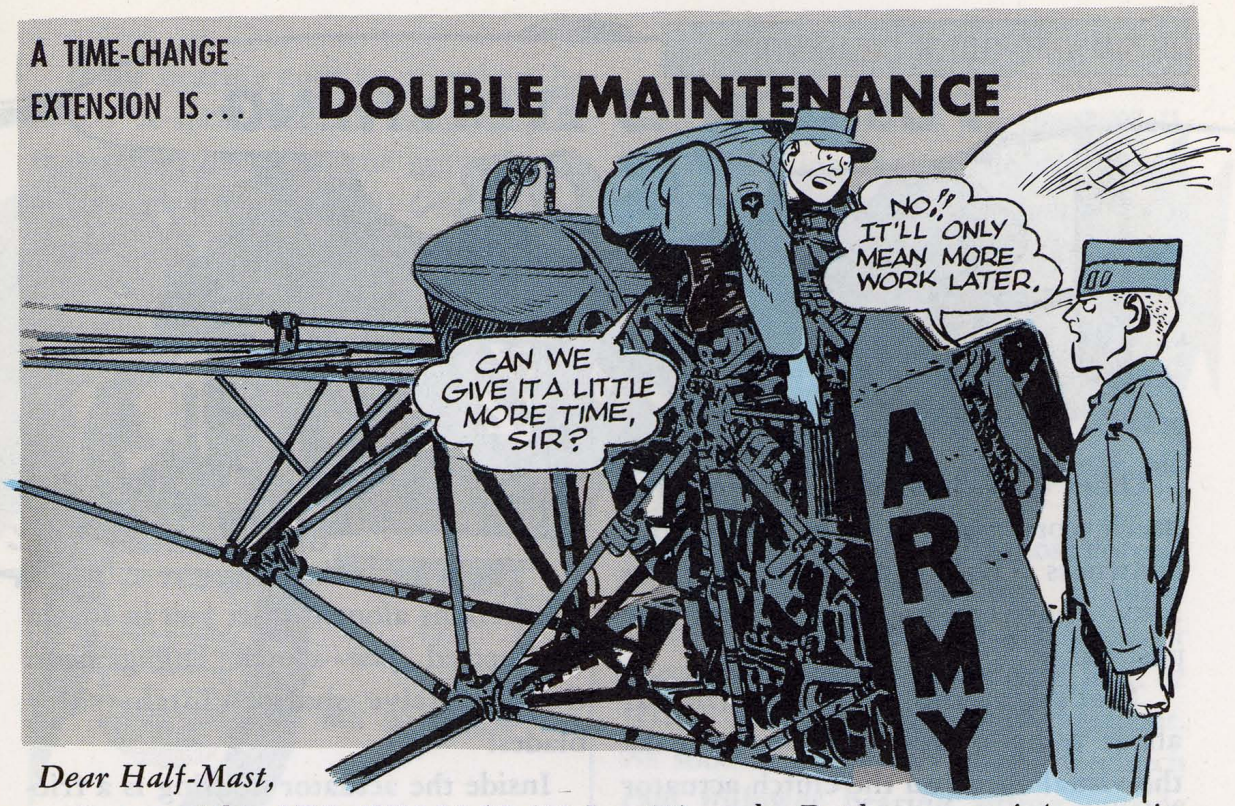
INSTRUCTIONS: Enter in the appropriate column opposite the aircraft designation, the total quantity required for that type aircraft.

| TYPE OF AIRCRAFT | OPERATORS' AND CREW MEMBERS' INSTRUCTIONS | ORGANIZATIONAL MAINTENANCE INSTRUCTIONS | FIELD MAINTENANCE INSTRUCTIONS | DEPOT MAINTENANCE INSTRUCTIONS |
|---|---|---|---|---|
| FIXED WING | | | | |
| L-19 | | | | |
| L-20 | | | | |
| L-23 | | | | |
| U-1A | | | | |
| | | | | |
| O/MI,Gen. | 69 | 22 | 12 | 2 |
| | | | | |
| | | | | |
| | | | | |

DA FORM 1 APR 59 12-5 EDITION OF 1 SEP 58 IS OBSOLETE. GPO 020335

So you can pass the word back up the line that these manuals covering both starched and droop wings are supposed to be a write-in item on the 12-5. The standard title for these applicable-to-all aircraft pubs is "Operational or Maintenance Instructions of a General Nature."

It gets shortened down to **O/MI, Gen.** on the form and goes in a blank space in the first column... followed by the quantity of this type pub your AG stockroom needs for distribution to all equipment users.




*Dear Half-Mast,*

*In para 5(b) of TB AVN 23-10 (31 Jan 58), under Replacement of Accessories, it states that all accessories listed in Section VI, Aircraft Inspection Requirements Handbook, that are over 400 hours and not critical items can be replaced at the nearest PE. For example, if the item is a 1000 hours time change and the PE is 100 hours, and if it falls between 950 hours and 1050 hours, it will be a normal time change.*

*What I would like to know is if the PE is at 990 hours and the accessory wasn't replaced, could it be extended to 1090 hours and still be called a normal time change—or if the PE is at 1015 hours and extended to 1115 hours?*

*SP5 R. W. S.*

Dear Specialist R. W. S.,

Not likely! When the TB says the "nearest" PE, that's exactly what it means. So, in this case, that accessory has to be replaced at 990 hours in order to qualify as a **normal** time change. Sure, you can extend replacement time to either 1090 or 1115 hours in the examples you gave . . . but then you have to comply with para 5b(4) of the TB, also. Both of these times would be bonafide extensions.

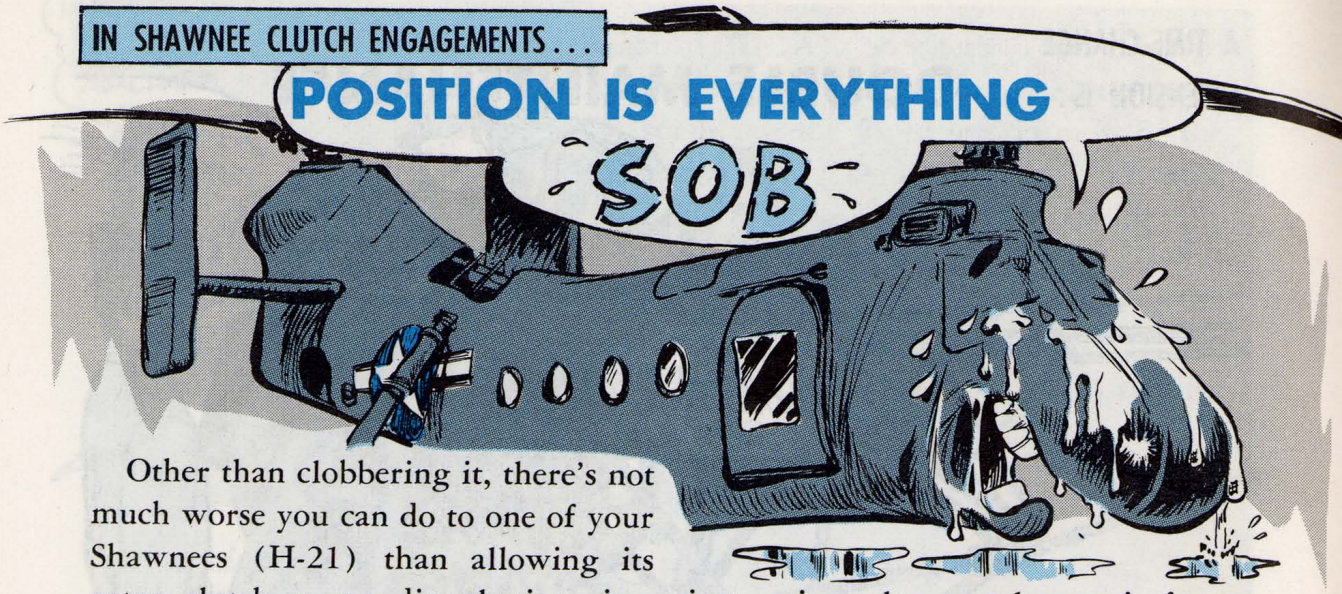
But when you think about the extra work necessary to handle an extension, it comes out looking like double maintenance. It's not worth the trouble unless the supply or maintenance situation is desperate.

The purpose of TB AVN 23-10 is to keep a red X off the airframe just because a replacement accessory is not on hand for the normal time change. The idea is to start supply action early enough so you won't run into any need for extending the time and save extensions for emergencies only.

Half-Mast

IN SHAWNEE CLUTCH ENGAGEMENTS . . .

# POSITION IS EVERYTHING

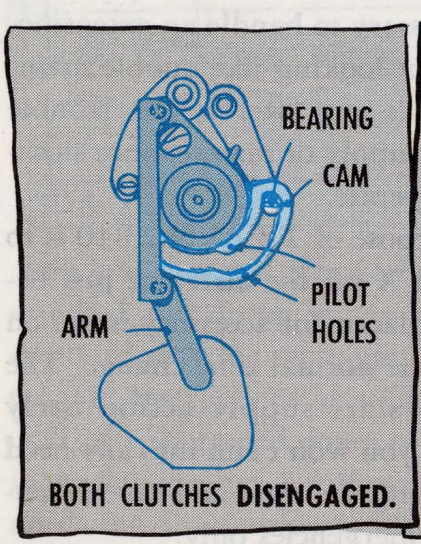


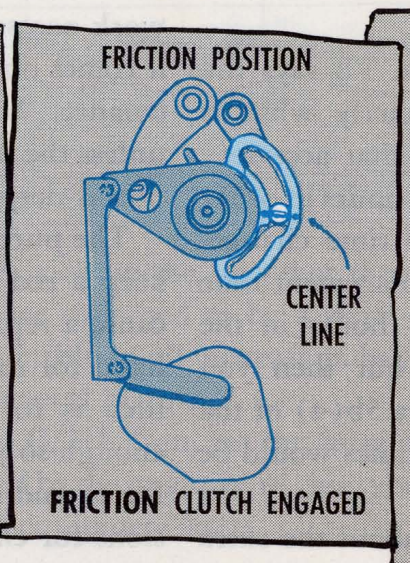

Other than clobbering it, there's not much worse you can do to one of your Shawnees (H-21) than allowing its rotor clutch to go directly into jaw position.

That's why the —1 is so particular about using a crew member to make the visual check on the clutch actuator arm's travel before **each** engine start. Even more important, though, are the maintenance instructions in TM 1-1H-21-2-4 about getting the right friction **position** on the jaw clutch cam **before** starting the engine.

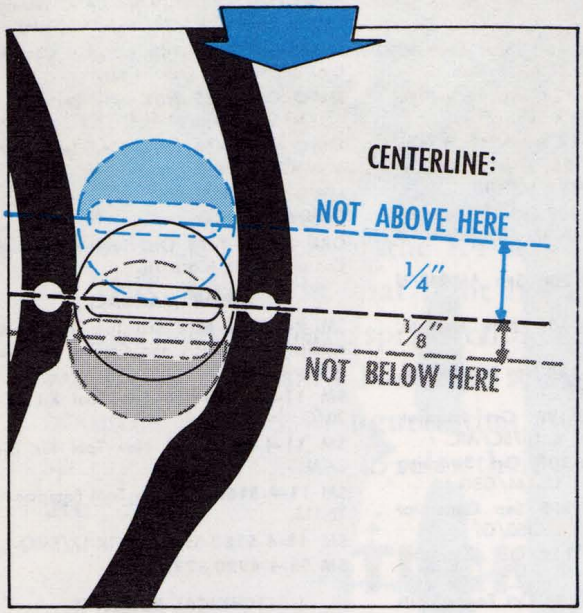
Just watching the movement on the clutch actuator arm is good enough most of the time . . . but not all of the time. In other words, following the —1 instructions alone can let you in for an unexpected jaw clutch engagement. Goodby drive shafts, clutch, rotor blades!

Inside the actuator housing is a friction microswitch which acts as a limit stop for the actuator arm. When it's working right, the arm should stop moving at a point where the bearing on the jaw clutch cam follower splits the centerline between the two pilot, or guide, holes in each side of the jaw clutch cam when the cockpit friction switch is placed in the FRICTION position.



If the bearing ends up anywhere between ¼-inch above or ⅛-inch below that centerline when the arm stops in friction position, it's still OK. But going beyond these normal friction position tolerances probably means that the friction microswitch has failed.




How come the clutch actuator arm didn't go directly into jaw then? Well, the only thing that's holding it back once the friction microswitch fails is an emergency mechanical lockout. But you can't rely on that lockout for too long, because it's not built to be a steady replacement for the microswitch. It'll wear out after only a few friction engagements. Engage it one time too many and . . .

Which means you keep those normal friction position tolerances in mind each time you're making that actuator check in order to catch that first or second mechanical lockout engagement. As soon as you notice that jaw clutch cam follower bearing sitting outside the tolerance limits for friction position —change that actuator **immediately**... if not sooner.

# SHORTCUT TO A HAPPY HOME

It's a sad kit that can't find a happy home . . . and some aircraft units aren't helping any.

As you may or may not know, modification kits are bought on the basis of one kit for one aircraft of a particular type. Which means the kits and the planes should wed up, pronto.

But it seems some units are hanging on to the modifications kits without having the plane on hand to put it on. Which sorta upsets the intended state of wedded bliss and causes trouble all around.

So if you have any kits around and no planes to use 'em on, turn 'em in soonest. The supply types will find a happy home for 'em elsewhere.

SB-1-15-9 (para 4d) and Supply Letter 3-60 tell your support unit how to handle the procedure after you turn in your kits.

A selected list of recent publications of interest to Organizational Maintenance Personnel.

### TECHNICAL MANUALS

**TM 1-1H-21-4-20P** Oct.

**TM 1-1H-37A-4-20P** Oct.

**TM 3-1040-214-20P** Nov Irritant Gas Disperser, M3.

**TM 3-1040-215-20P** Nov Irritant Gas Disperser, M4.

**TM 3-4240-225-15** Oct Door, Permeable Membrane Protective Shelter, M1.

**TM 5-3805-216-20P** Nov Ditching Machine, Gar Wood Mod M-407.

**TM 5-3895-215-25P** Nov Kettle Heating, Bit Gas Driven; Airoil Mod 7ZPSAO Less Military Standard Engine.

**TM 9-1410-250-12/9** Nov Interchangeability of Missile Guidance Sets 9002298 and 9141683 (Herc).

**TM 9-1430-250-20P/4** Sep Nike Herc.

**TM 9-2330-238-24P** Oct Chassis, Semitrailer: M295A1.

**TM 9-2350-215-20P** Oct Tank Combat 105MM Gun, M60.

**TM 9-6920-212-14** Sep Subcaliber Mortar Trainer M32.

**TM 9-6920-213-20P** Sep 762-MM Training Rocket Set M31.

**TM 10-3930-212-20P** Nov Repair Parts and Special Tools List for Rough Terrain, 6000 Lbs Baker MHE 164.

**TM 10-3930-219-20P** Oct Truck, Lift, Fork, MHE 169.

**TM 10-3930-405-20** Oct Tractor, Warehouse, Tired Wheels MHE-168.

**TM 10-4930-201-15** Oct Dispensing Pump, Hand Driven, Piston Type 15 GPM.

**TM 10-5430-201-25P** Nov Tank, Liquid Storage, Metal, 600 Gal.

**TM 10-500-73** Nov Air Delivery: Preparing 900-Gallon Water Distributor with Collapsible Tank and Spray Bar Assembly.

**TM 11-1510-201-12P** Sep Electronic Equipment L-23.

**TM 5-3655-203-12P** Oct Generating and Charging Plant, Hydrogen-Carbon Dioxide.

**TM 11-5805-202-25P** Sep Telephone Central Office AN/MTC-3.

**TM 11-5805-211-25P** Sep Telephone Central Office AN/MTC-7.

**TM 11-5805-233-20P** Oct Terminal Telegraph Carrier AN/FCC-3 and AN/FCC-3A.

**TM 11-5805-252-12-20P** Oct Raining Inverters TA-46/FT, TA-46A/FT & TA-46B/FT.

**TM 11-5805-296-12P** Oct Generators GN-41 and GN-41B.

**TM 11-5815-200-20P** Oct Teletypewriter Set AN/FGC-20, AN/FGC-20s, AN/UGC-4 Teleprinter TT-259/FG.

**TM 11-5815-268-20P** Oct Typewriter Set AN/TGC-3.

**TM 11-5820-204-25P** Oct Radio Terminal Set AN/MRC-69 (V).

**TM 11-5820-222-20P** Oct Radio Sets AN/VRC-24 & AN/TRC-68.

**TM 11-5820-247-20P** Oct Radio Set AN/FRC-15.

**TM 11-5820-324-20P** Sep Radio Transmitter BC-610-E, BC-610-F, BC-610-G, BC-610-H and BC-610-1.

**TM 11-5820-382-12P** Radio Sets AN/URC-11 and AN/URC-14.

**TM 11-5820-452-12P** Sep Keyer KY-79/UR.

**TM 11-5821-237-20P** Aug Radio Transmitting Set AN/URW-3 and AN/URW-3A.

**TM 11-5830-225-15P** Oct Rack Electrical Equipment MT-1579/G.

**TM 11-5830-230-20P** Oct Audio Distributing Central AN/FIA-1.

**TM 11-5840-211-20P** Oct Radar Set AN/PPS-4.

**TM 11-5840-229-15** Sep Radar Set AN/TPS-21.

**TM 11-5840-229-20P** Oct Radar Set AN/TPS-33.

**TM 11-5840-248-12P** Sep Receiver-Transmitter, Radar RT-406/FPS-36.

**TM 11-5841-211-12P** Sep Radar Surveillance System AN/APS-85 (XE-2).

**TM 11-5895-241-12** Sep AN/FSW-8(V).

**TM 11-5895-257-20/2** Jul Coder-Decoder Group, OA-1593/MSQ-18.

**TM 11-5895-278-20P** Oct AF Amplifiers AM-244/U, AM-244A/U, AM-245/U & AM-245A/U.

**TM 11-5895-282-20P** Sep AM-243/U and AM 243A/U.

**TM 11-5965-210-15P** Nov Headset, H-104/G.

**TM 11-5965-237-15P** Nov Microphone, Dynamic M-33A/AIC.

**TM 11-5965-238-12P** Oct Headset. Electrical H-75B/AIC & H-75C/AIC.

**TM 11-6110-203-20P** Oct Switching Unit, Power Transfer SA-444/GSQ.

**TM 11-6115-203-20P** Sep Generator Set, Gasoline Engine PU-450/G.

**TM 11-6115-220-15P** Oct Generator Set, PU-332/G.

**TM 11-6115-221-20P** Oct Power Units PE-214-B & PE-214-C.

**TM 11-6625-353-20P** Sep Amplifier, Radio Frequency AM-1881/U.

**TM 11-6625-362-12** Sep Test Set, Relay TS-1194A/U.

**TM 11-6625-372-20P** Oct Test Sets AN/FCM-5, AN/FCM-5A & AN/FCM-5B.

**TM 11-6625-381-20P** Oct Amplifier, Audio Frequency AM-844/U & Amplifiers BC-1388-A, BC-1388-B and BC-1388-C.

**TM 11-6665-201-12P** Oct Radiac Set.

**TM 11-6665-204-20P** Nov Calibrator Sets, Radiac TS-784/PD and TS-784A/PD

**TM 11-6720-208-20P** Sep Still Picture DA-30A and Lens Cone Group LA-136A.

**TM 11-6740-227-12P** Sep Printer, Projection, Photographic EN-66A.

**TM 11-6740-229-20P** Oct Printers, Contact, Photographic PH-193 & PH-193A.

**TM 11-6760-202-20P** Oct Mount, Aircraft Camera LA-116A.

**TM 11-6760-209-12P** Oct Tripod, Photographic HT-1193/UF & HT-1193A/UF.

**TM 55-1520-204-10** Sep H-13E, G & H.

**TM 55-1520-204-20** Sep H-13E, 13G & 13H.

### LUBRICATION ORDERS

**LO 5-3825-216-15** Oct Sweeper, Rotary, Towed, Little Giant Mod ES-100C.

**LO 5-4310-228-15** Oct Compressor, Rotary Wheelbarrow Frame Mounted.

**LO 9-1420-502-12** Aug Radar Set AN/MPQ-35 (Hawk).

**LO 9-1430-503-12** Aug Radar Set AN/MPQ-34 (Hawk).

**LO 9-1430-504-12** Aug Radar Set AN/MPW-33 (Hawk).

**LO 10-3930-219-20** Oct Truck, Lift, Fork, 4,000-Pound.

**LO 10-4110-201-20** Aug Refrig unit, Thermo King.

### MODIFICATION WORK ORDERS

**MWO 9-1450-250-20/1** Nov Warhead Hoisting Beam to Accommodate Warhead XM74.

**MWO ORD J753-1-W15** Nov Addition of Safety Support Straps.

**MWO ORD Y4-3-W10** Nov Tracking Sta Gro OA-866/MPA-4, Rep Cap and Res (Ajax) An.

**MWO ORD Y28-W39** Ins CAM, Wiring Cha and Res (OA-1479/MSA-19) (Herc).

**MWO ORD Y28-W40** Ins of a Control Dial and Wiring Cha (Herc).

**MWO ORD Y52-W58** Nov Radio Set AN/MRQ-7 Corporal II.

**MWO ORD Y56-W62** Nov Test AN/MSM-4: Add Mounting Brackets (Corp).

**MWO ORD Y75-W61** Nov Nike Herc Guided Missile System.

**ORD 7 SNL Y-98** Oct Hoisting, Missile Container, M5 (Corp II).

### SUPPLY MANUALS

**SM 9-4-5180-EO2** Sep Tool Kit, Field Artillery Mechanic's and Combat Vehicle Armament.

**SM 11-4-5180-RO3** Sep Tool Kit TK-90/G.

**SM 11-4-5180-RO4** Nov Tool Kit TE-87-A.

**SM 11-4-5180-S18** Sep Tool Equipment TE-114.

**SM 11-4-5180-S19** Oct TK-17/FMQ-1.

**SM 55-4-4920-S23,** Oct.

### TECHNICAL BULLETINS

**TB 9-1315-200/1** Nov Fuze for 81-MM Mortar Ammunition.

**TB 9-1410-250-12/2/3** Oct Hydraulic Pumping Unit (HPU) 9019617 (NIKE-HERC).

**TB 9-1410-250-12/11** Nov Removal of Harness Assem 8030004.

**TB 9-1430-250-20/2/3** Oct Tracking Station Theory on Modified Equipment (NIKE-HERC).

**TB 9-2300-240-10** Dec Carrier, Personnel, M59 and M113.

### FORMS

**DA Form 9-28** Oct

**DA Form 9-29** Oct.

**DA Form 9-89** Nov Daily Check Sheet (Herc).

**DA Form 9-102** Oct Monthly Check Sheet Missile and Target Tck Radar Sys (Ajax).

**DA Form 9-186-Book** Oct.

### SUPPLY MANUALS

**SIG 7 & 8-C-2145/FSG-1** Sep.

**SIG 7 & 8-C-2291/FSG-1** Nov.

**SIG 7 & 8-MX-2815/FSG-1** Oct Stockage Guide.

**SIG 7 & 8-OA-1430/FSG-1** Nov.

**SIG 7 & 8-OA-1664/FSG-1** Sep.

**SIG 7 & 8-OA-1786/FSG-1** Sep.

**SIG 7 & 8-OA-1864/FSG-1** Nov.

**SIG 7 & 8-OA-2399/FSG-1** Oct.

**SIG 7 & 8-OA-2463/FSG-1** Sep.

**SIG 7 & 8-OA-2562/FSG-1** Sep Stockage Guide Generator Group.

**SIG 7 & 8-PP-2005/FSG-1** Oct.

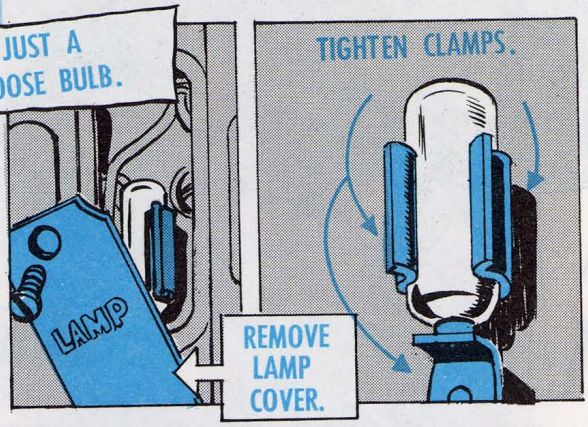
# BULB BLURB

Been havin' trouble reading the dial on your receiver-transmitter RT-66/GRC? The light a little dim?

Could be nothin' more than a loose dial light bulb.

On some models of the RT-66, 67, 68/GRC series, the dial light bulb is held in place by three spring clips. And when you think how bad those sets are bounced around, it figures that those spring clips are going to relax their grip after a bit.

And that's when the lights go dim. So—just screw off the dial lamp cover and use either your fingers or a pair of pliers to pinch those clips a little closer together. That'll hold the bulb snugger—and guarantee to throw a brighter light on the subject.




# TUCK 'EM AWAY

Best way to get 'em out of the way is to tuck 'em away.

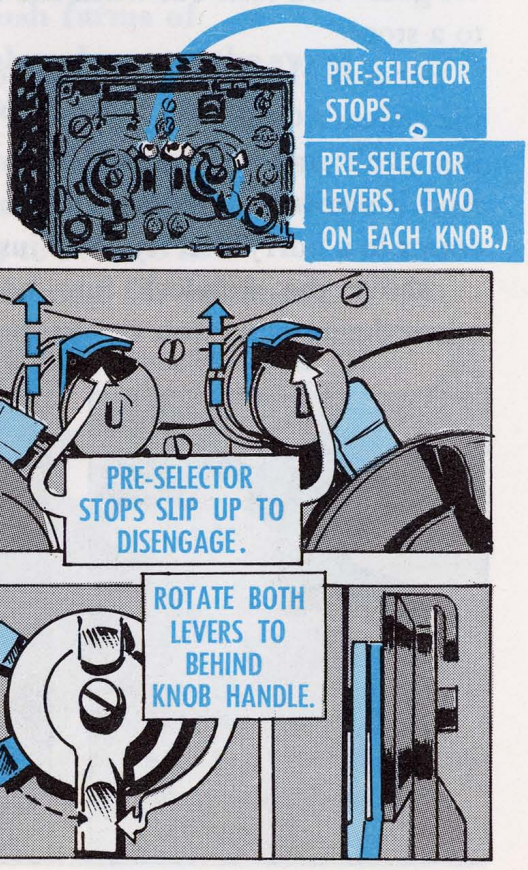
So the word goes about the detent pre-selector levers on your Receiver-Transmitters RT-66, 67, 68/GRC.

Of course, they come in mighty handy for quick channel switching in the dark o' night when there's no time—and less light—to fiddle around with knobs.

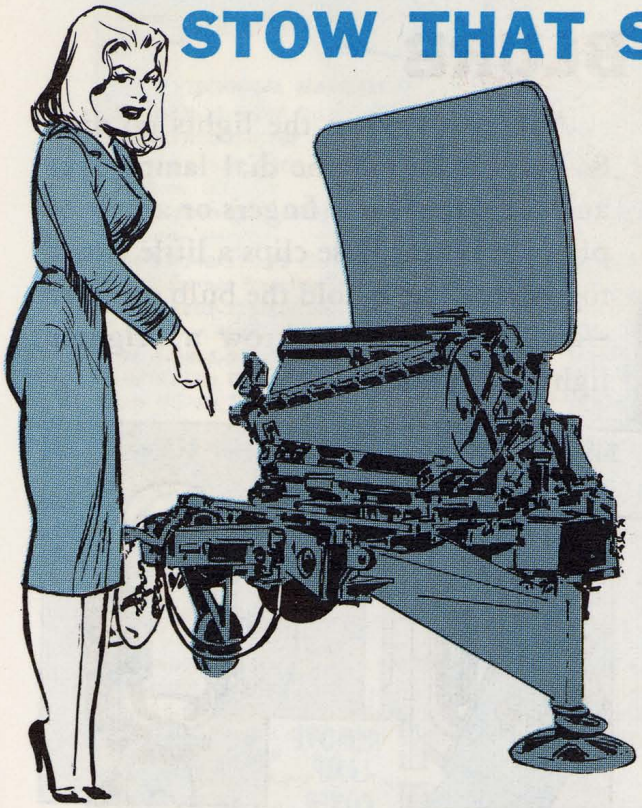
But they should be returned to their NEUTRAL position when the operation is over and new channels assigned. Line the levers up together behind the knob handle.

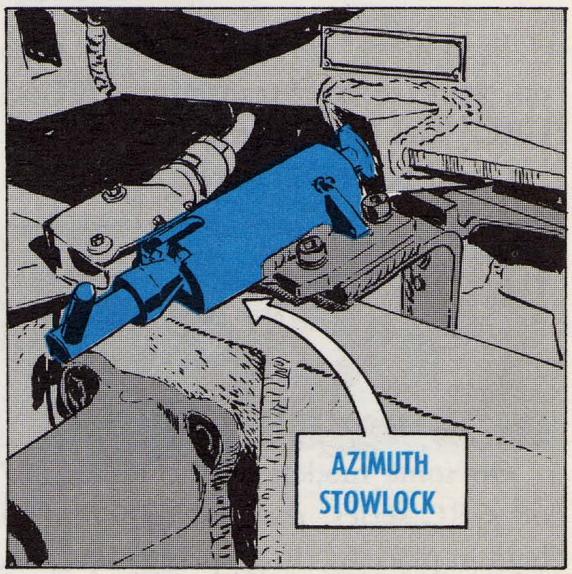
Same for the pre-selector stops. Slip them up into their disengaged position.

This way, you—or the next man to operate the set—will have a clear panel to start with. And if he wants to use the detents, they'll be ready for positioning.



# STOW THAT SUDDEN STOP



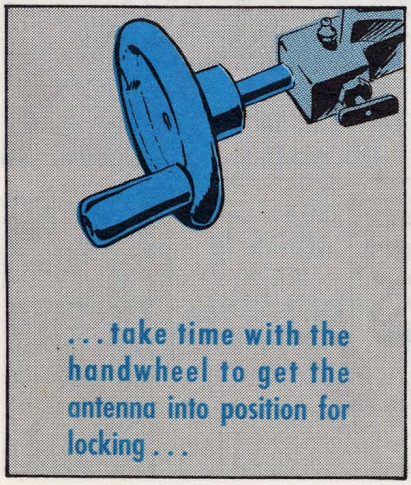


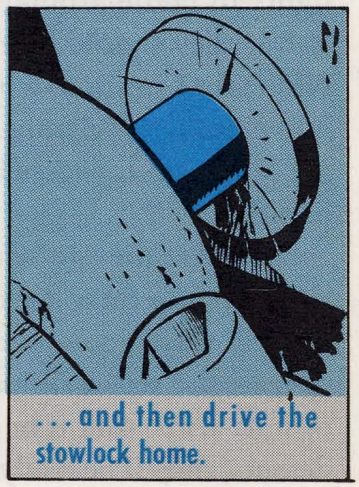

'Round and 'round your AN/MPQ-4A goes—and look out when she comes to a stop!

Because the azimuth stowlock on the Antenna Group OA-1258/MPQ-4A just can't stand up to a sudden stop. And it sometimes happens that an operator in a hurry will try to do just that . . . shove the stowlock into position when the antenna unit is "on the fly."

That'll not only bugger up the stowlock, but many thousands of dollars worth of AN/MPQ-4A as well. And your mortar locator just isn't the kind of gear that can be handed over to the nearest support unit for repair.

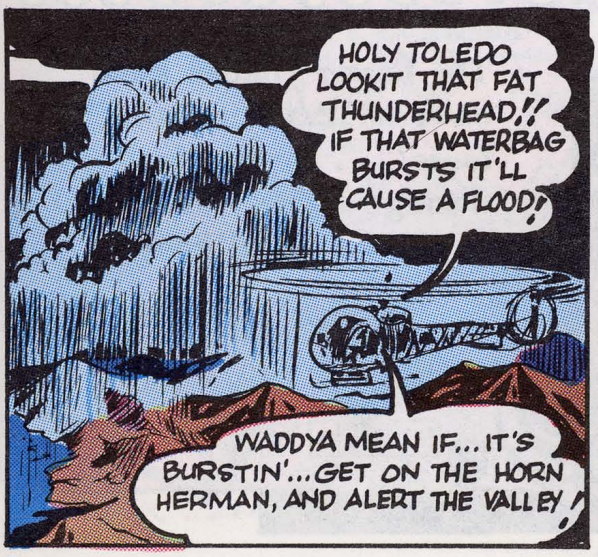
It takes high echelon experts to put it back on the beam. Takes time, too—lots of time away from your outfit. When it's time to stow the antenna . . .

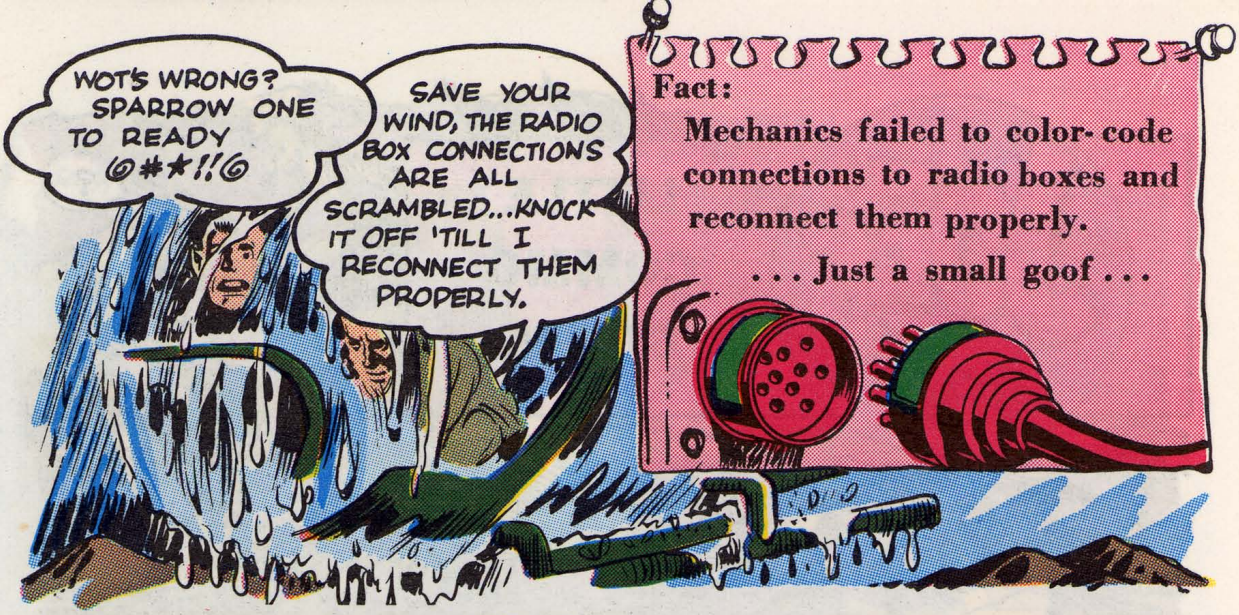




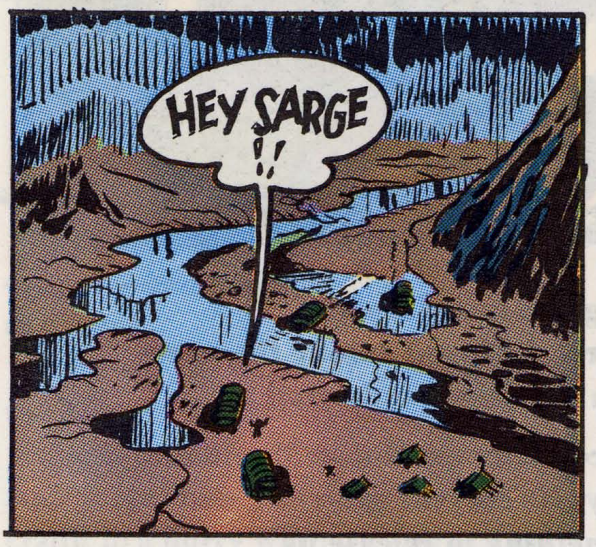
All summer, the beautiful blue Binjo river snakes its way along, feeding the lush farms of the fertile Kimchi Valley. Here, deployed among the sweet scented hills, troops maintain a combat-ready vigil . . .

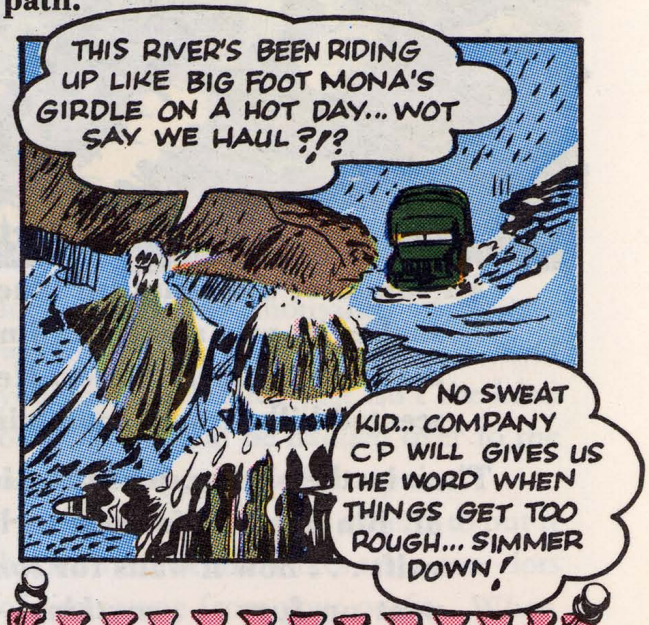
Then in the spring, when the ice melts on Moose Mountain, ol' Binjo grows fat and surly, its current growling and swift . . . now it waits for *something* to release its pent up fury . . . *anything*—a cloud-burst for instance . . .



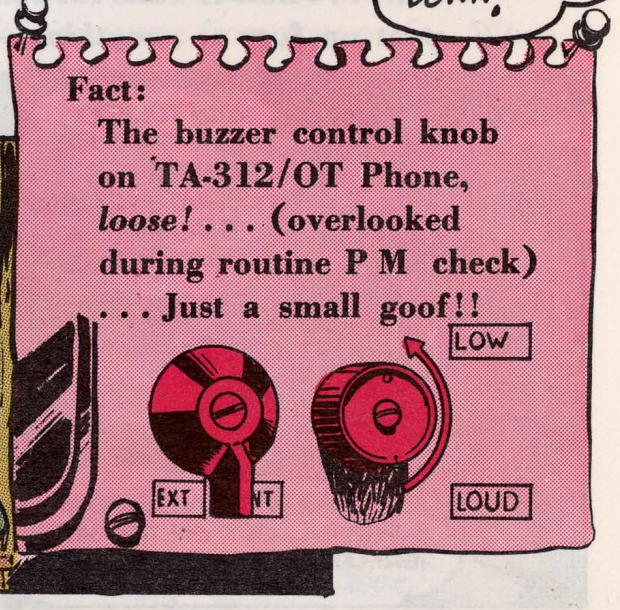


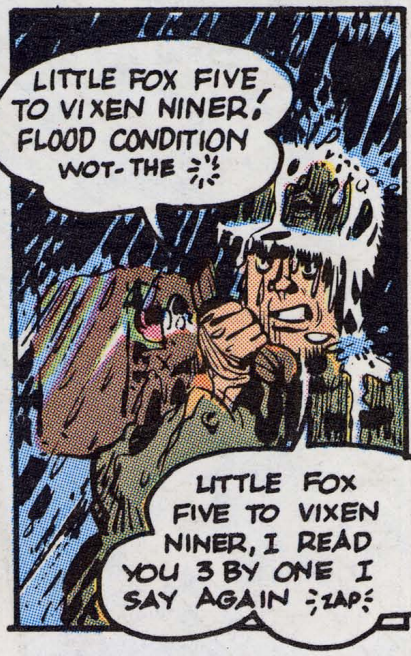

And so . . . time is lost . . . ol' Binjo is now an undisciplined torrent of wet fury sweeping aside everything in its path.



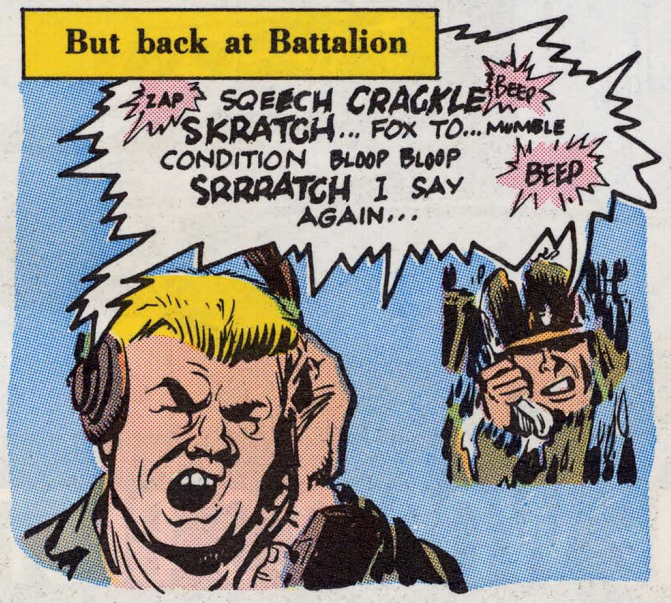



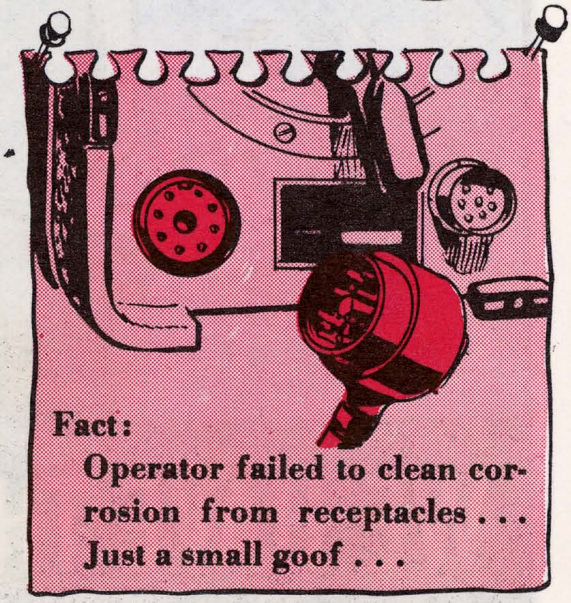

But . . . At Company C P






**But back at Battalion**



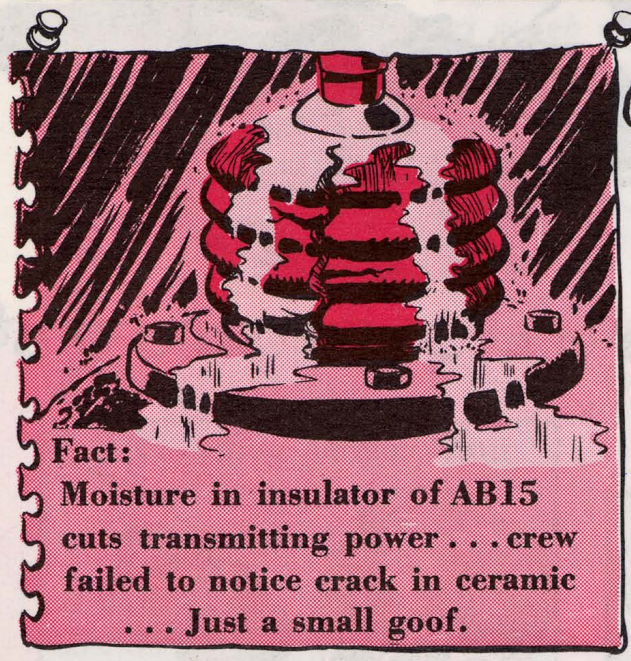
**Fact:**
**Operator failed to clean corrosion from receptacles . . . Just a small goof . . .**

JOE'S
Dope Sheet
WE HAVE THE WORLD'S BEST EQ

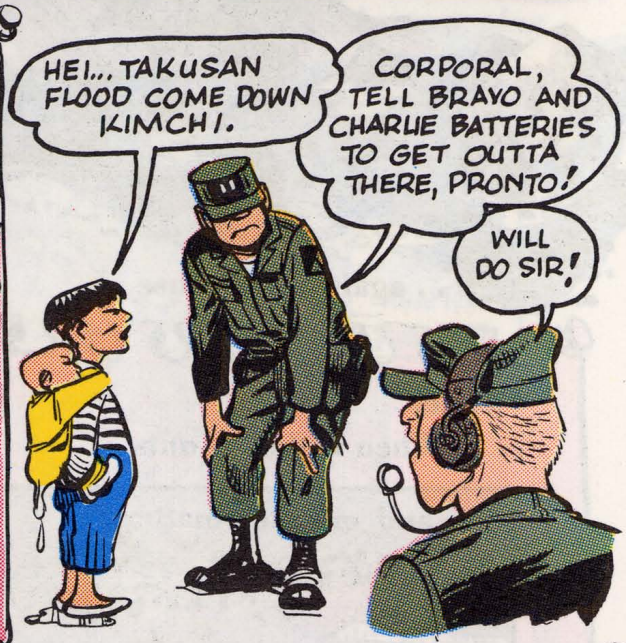
JOE'S Dope Sheet
When the time comes to pass on "the word"
Things get rough if the message's unheard!
Just a small commo freak
Leaves you 'way up the creek,
All washed up, high-and-dry, or absurd.
WE HAVE THE WORLD'S BEST EQUIPMENT ...Take care of it

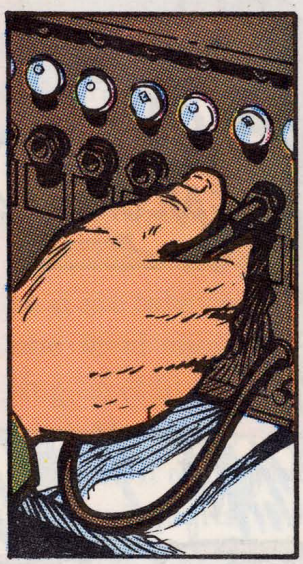
QUIPMENT ...Take care of it

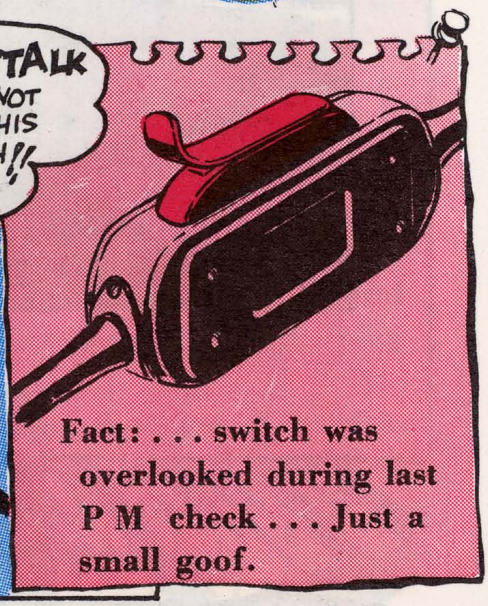
TIFFANY'S
MOUSY MAE'S
BIG FOOT MONA'S
HEY JOE... MAY DAY MAY DAY!
? WHY IT'S BIG FOOT MONA!
HEAR PITTER PATTER OF LITTLE FEET.
NO SWEAT BOYSAN ...IS MICKEY MOUSE CORNERS IN FULL RETREAT!
WADDYA THINK SARGE! DO WE EVACUATE CIVILIANS?
WE GOT NO ORDERS ...I CAN'T GET THRU... HMM I GUESS IT'LL BE OKAY T'TAKE 'EM.
OKAY MONA, BUT TAKE ONLY ESSENTIALS ... SAM YOU TAKE A COUPLA KIDS.
HEI HEI
AH... YOU ICHI-BAN HONCHO, JOE! I GEEF YOU BIG DISCOUNT AT NEW STORE!
MAN, LOOK IT THEM TANKERS ...GUESS THEY AIN'T GOT THE WORD YET!
HEY SAM!! NO. 10 IS ALMOST DOWN FOR THE DEEP SIX... THEY CAN'T BUDGE!
@★!! ★ LOUSY RIVER... ⁘★×!?
WHINE!
ROAR!
CALL NUMBER TWELVE, TO HELP US TOW... THE VALLEY'S FLOODIN' AND WE GOTTA GET OUT FAST.
@★!! CRUMMY TANK!



**Fact:**
**Moisture in insulator of AB15 cuts transmitting power . . . crew failed to notice crack in ceramic . . . Just a small goof.**





**Fact: . . . switch was overlooked during last P M check . . . Just a small goof.**

And the rains stop . . . and the waters run off and quiet, once again, flows the Binjo!! . . . Now there is nothing to do but recover, repair . . . and count the damage . . .

. . . against this cause . . .

Fact . . .

When action counts . . .

and minutes matter . . .

little commo goofs . . .

CAN MAKE BIG FAILURES!

# QUESTION AND ANSWER DEPARTMENT

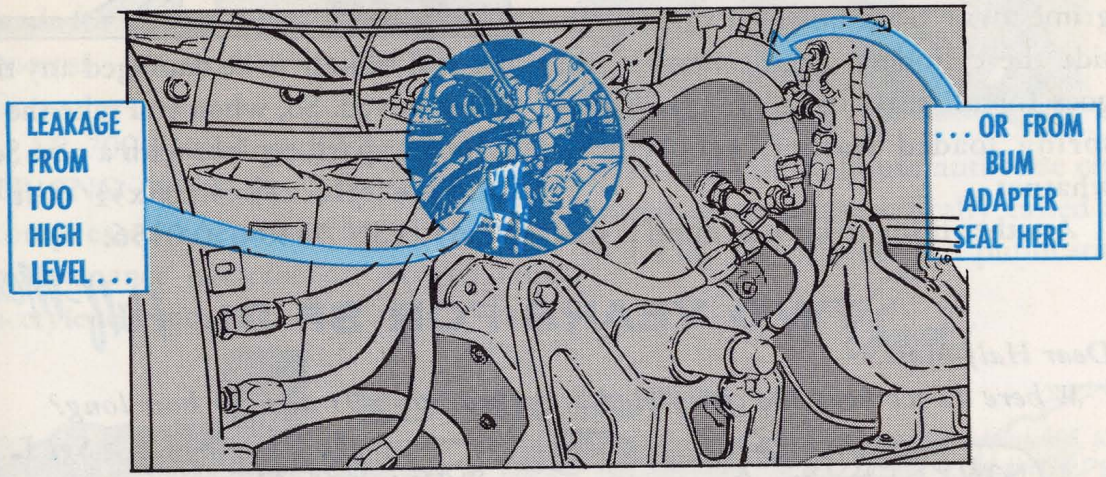
## GO--GOING, GONE

*Dear Half-Mast,*

*We've just got some 1959 model, G744 series 5-ton trucks that have a vent-type filler plug on the steering gear housing where older vehicles had a solid plug.*

*Some of these steering gears cough up GO 90 oil through the vent plug. Should we replace this plug with one that's solid?*

*V. R. B.*




Dear V. R. B.,

Like the cowpoke said, the answer's nope. That filler plug with the vent was installed at the factory to do away with pressure buildup caused by expansion of the lubricant.

To go back to a solid plug would be treating the cough instead of the cause.

So, leave the plug be, and check to see if the lubricant level's too high. The lube level should be one inch below plug level-like LO 9-8028 (15 Aug 57) says. About 5¼ pints of GO 90 will likely fill it to the level, even though the LO says 3 quarts.

If you find it's still heaving up oil after this check, hydraulic pressure in the system may be too high. There're two possible causes . . . a pressure relief valve that's not adjusted right or defective adapter oil seal in the hydraulic cylinder.

Either o' these may let oil sneak into the steering gear housing. And this'll force your GO 90 out of the filler plug vent.

If you've got this kind of leakage, you'll need to call in your support to adjust the relief valve or replace the power cylinder assembly.

*Half-Mast*

## PUCKER UP

*Dear Half-Mast,*

*How do you install the oil seal in the boom lift cylinder head of the M108, M62 and M246 wreckers? Do the lips go up or down?*

*It seems they come from the factory with lips up, but some that've been repaired have the lips turned down. I'd guess the lips should be up to keep out dirt. Right?*

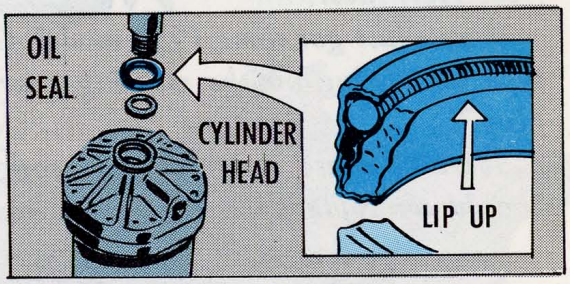
*SFC R. H. R.*

Dear SFC R. H. R.,

Up is the right way to turn the lips on those seals, Sarge. Up and away from the head, just like they came from the factory.

One job those seals do is to keep grime away from polished surfaces inside the cylinders. So the lips-up rule goes for all seals issued for this use—spring loaded leather, neoprene or whatnot.

Another thing to keep in mind is that




the seal's likely to be damaged any time it's removed. So, when you take the lift cylinder apart, replace with a new Seal, oil, type ML, 2½x3.505x½ (lift cyl head), FSN 5330-050-0156.

Half-Mast

## TWO YEARS FOR SF 91

*Dear Half-Mast,*

*Where do we keep the completed Standard Form 91 and for how long?*

*Sgt L. M.*

Dear Sgt L. M.,

SF 91 (Operator's Report of Motor Vehicle Accident) goes in each vehicle or other type of self-propelled equipment requiring a licensed operator. That way each driver will have one handy **at all times** he's moving. This point is spelled out in para 14a of TM 9-2810 (Aug 58).

Whenever an accident takes place, the completed SF 91 becomes part of the accident records along with the operating and dispatch records covering the vehicle or equipment involved. These forms all go into your accident report files—which are authorized by para 20 of appendix V, AR 345-292 (14 November 58).

The same paragraph tells you to destroy these files after two years, and explains that the files include "reports and related papers" concerning injuries or accidents. This covers your SF 91 . . . even though it's not called out by title or number.

Half-Mast

# WHAT'S THE ANSWER?

*Dear Connie,*

*Here's a question maybe you can answer for me. An old-timer in my outfit told me that anti-seize compound, FSN 8030-243-3284, should not be used on threaded fittings of oxygen or acetylene gases. He says it's dangerous because it sets up a possibility of an explosion.*

*Is that true? Also, what tech service has the responsibility of the compound?*

*Sgt. J. B. B.*

Dear Sgt J. B. B.,

Anti-seize compound (its full nomenclature is Thread Compound, Anti-seize and Sealing, Oxygen Systems, FSN 8030-243-3284) is specifically made for high and low pressure oxygen systems. It's stocked by the Chemical Corps in 4-oz jars.

AR 700-8120-1 with Change 1, and TB ENG 39 on the safe handling of compressed gases outline the Army maintenance doctrine on oxygen and acetylene fittings.

You should only use anti-seize compound when it's specifically called for in a TM, TB, or other DA publication.

Connie

# NOT IN SUPPLY

*Dear Half-Mast,*

*I'm having a hard time convincing the guys in my outfit about something in the M13 cupola on the M59 APC and M84 self-propelled 4.2-in mortar.*

*I say the clamp that holds the solenoid to the back plate of the .50-cal machine gun's not an item of issue. They say it has to be.*

*SFC I. W. W.*

Dear Sergeant I. W. W.,

You can count your winnings. It's not an item of issue.

That leaves you with three ways to get another when one is lost. You can requisition a solenoid assembly . . . get a clamp from a cannibalized item . . . or have your support unit make one.

Half-Mast

## WHAT'S THE FLAP?

*Dear Half-Mast,*

*I need the federal stock number to order mud flaps for my M246 5-ton wrecker because we get caught on this every time we have an inspection. I can't find these flaps in any of the SNL's. Can you help us out?*

PFC R. W. H.

Dear PFC R. W. H.,

There's no Army-wide requirement for mud flaps on tactical vehicles . . . so you've got problems from a local requirement.

You can't find mud flaps in any of the SNL's or the -20P manuals because they're not an item of issue.

If your flapless truck puts the inspector in a flap, maybe you can keep him happy by getting some material by local purchase (or scrounging) and making up a set of flaps, using one of the old ones as a model.

He wouldn't gig you unless it was local SOP to have flaps, and if it is local SOP, there should be channels for you to get the material to make them.

Half-Mast

## DON'T SHOOT, MISTER!

*Dear Half-Mast,*

*When Ordnance takes a 90mm gun out of a tank and then tears it all apart, shouldn't it be fired to test it out after they get it back together? What authority do you quote for this test firing?*

Capt J. K.

Dear Capt J. K.,

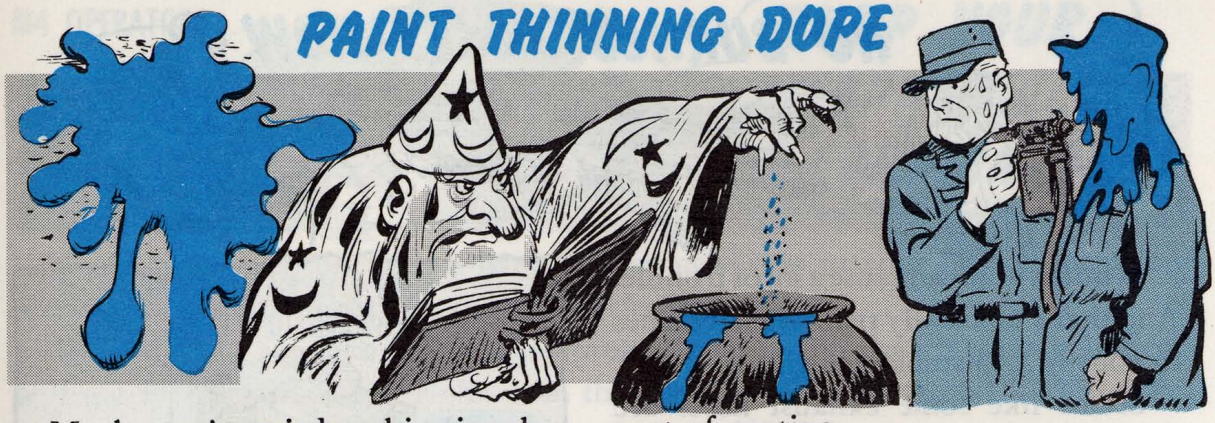
You can't quote any authority for this type firing because it's felt this is not necessary.

The final inspection that the Ordnance Support people make after rebuilding or repairing a gun includes operating all of its assemblies to be sure they're in working order.

They do this before they turn the gun over to you. So . . . there's no need to use ammunition on a test firing that's not needed. Besides, all cannon tubes are proof fired before they are accepted for issue to using units.

Half-Mast

# PAINT THINNING DOPE



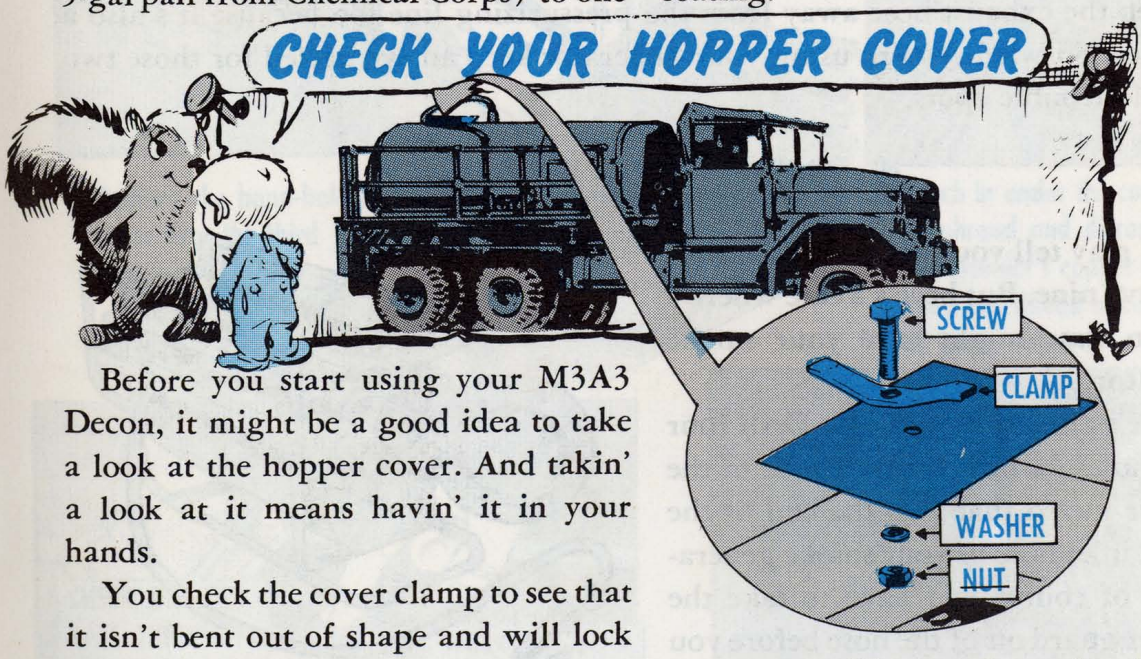
Maybe you've tried to thin zinc chromate type primer coating with turpentine so you could paint the inside of your gas tank, on gasoline tank bodies and water tank bodies. You found that it wouldn't work.

If you want to thin the primer coating so you can spray it, the best thing to do is mix it well, then use two parts toluene (FSN 6810-290-0048 will get 5-gal pail from Chemical Corps) to one part of coating.

If you want the primer coating to dry slower, then up to ¼ of the toluene may be replaced by xylene (FSN 6810-227-1253, 1 gal, QM).

You usually don't have to thin the primer coating if you're going to apply it with a brush. But if you do want to thin the primer coating, then use one part toluene to twenty parts of prime coating.

# CHECK YOUR HOPPER COVER




Before you start using your M3A3 Decon, it might be a good idea to take a look at the hopper cover. And takin' a look at it means havin' it in your hands.

You check the cover clamp to see that it isn't bent out of shape and will lock the lid in place. Then you check the screw, washer, and nut to make sure they're in good condition. And make sure the nut's tight.

And what's the purpose of all this eyeballin'? It's to make sure that hopper cover will stay where that hopper cover belongs and that's on top of the hopper and not down in the tank.

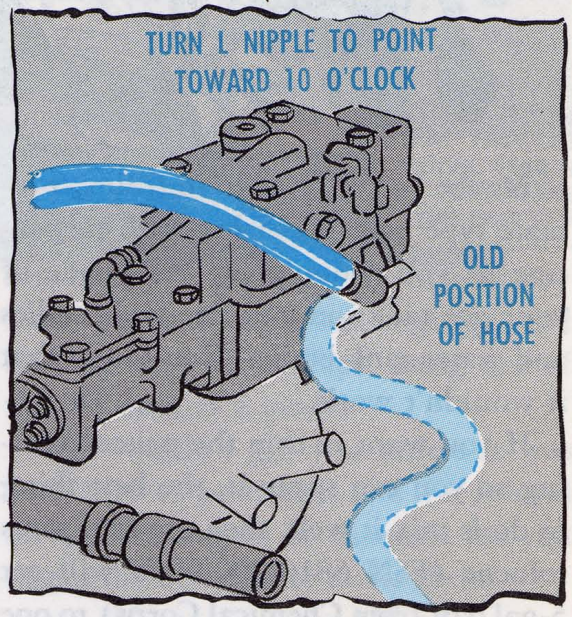
When the cover falls in the tank with the decon running it bends the agitators and puts your decon out of commission.

# NO BURNED HOSES NOW

A burnt hose can cause a lot of trouble. And that's especially true when it comes to your M3A3 smoke generator.

Seems like some exhaust hoses are burning because they're routed by the outlet nozzles. So if you've been having trouble with your fog-oil exhaust hose scorching and burning . . . keep it away from the nozzles.

To help you to keep the hose out of the heat and out of trouble, make sure that the L-nipple that connects the hose to the pump assembly is turned so that it points toward 10 o'clock.



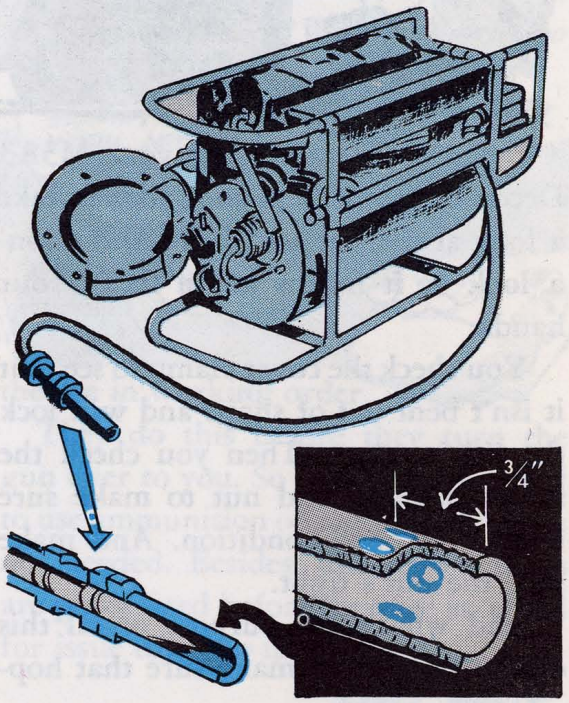

Keep the exhaust hose away from the pressurizing line too because it's also a scorcher. So when you're using your generator keep an eye peeled for those two possible trouble spots.

# A HOLE WILL DO IT

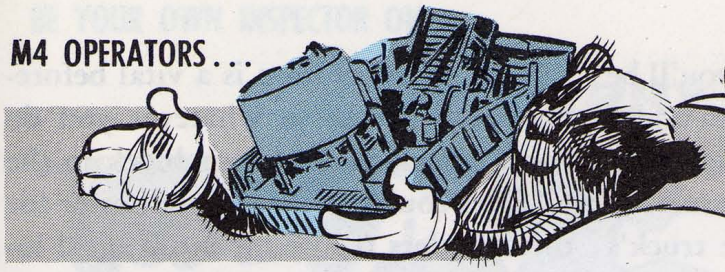
QM may tell you that a stitch in time will save nine. But here's a case where a hole in time might save your smoke generator.

Here's all you have to do: Drill four ¼-in holes ¾ inch from the end of the strainer guard that's on the end of the fog-oil inlet hose of your smoke generator . . . of course you have to take the strainer guard off of the hose before you do your drilling. These holes are already on the latest M3A3's.

Then in case the hose touches the bottom of the oil drum there won't be a vacuum and no damage would be done to the generator.



M4 OPERATORS . . .



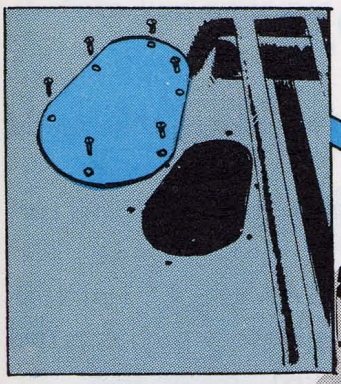
# BURP YOUR MECHANICAL LUBRICATOR

You'd best quick-like add this important new step to your before-operation services for the compressor on the M4 service unit.

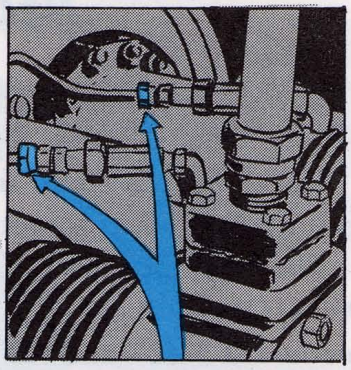
The only way to make sure the compressor's third and fourth stage cylinders will get their share of oil—right from the start—is to check the oil lines for air when you prime the mechanical lubricator.

So, prime the mechanical lubricator—check it as usual for any trapped air. That is, loosen the vent screws and stroke the hand pumps (flushing units) separately. When you get no sound of escaping air re-tighten the vent screws.

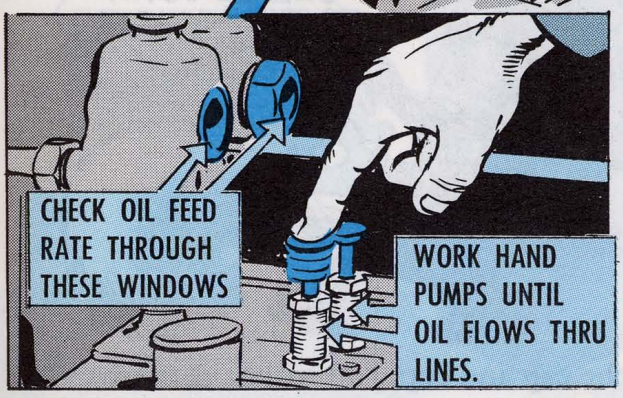
OK, now comes the added check for unwelcome air:



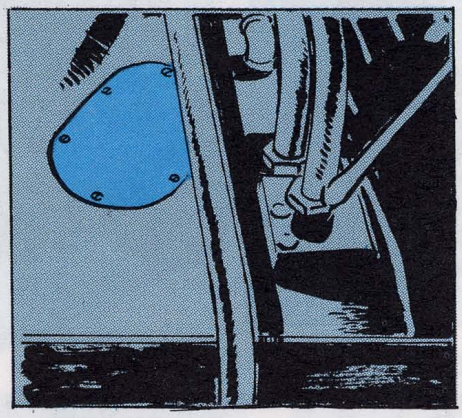
1. Remove the hand-hole cover over the third and fourth stage cylinders.



2. Reach in under the compressor shroud and disconnect the cylinder's copper oil lines, just ahead of the oil check valve.




3. Stroke the hand pumps again until oil flows from the oil lines. Then reconnect the copper lines to the oil check valves.



4. Replace the hand-hole cover, and you're done with the burping job.

MORE

The new step is simple, but you'll be working in a dark, crowded area under the shroud. You'll need all the light you can get . . . a flashlight, an extension cord, or even pulling back the truck's tarp will help.

This added caution is a vital before-operation check, so whatever you do don't over-look it. An air block in the oil lines could spell sudden disaster for the cylinders fed by the mechanical lubricator.

### OIL FEED RATE

As you check the oil feed rate, through the glass feed windows, the mechanical lubricator should be sending four to six drops of oil per minute to the third stage cylinder, and only two to four drops per minute to the fourth stage cylinder.

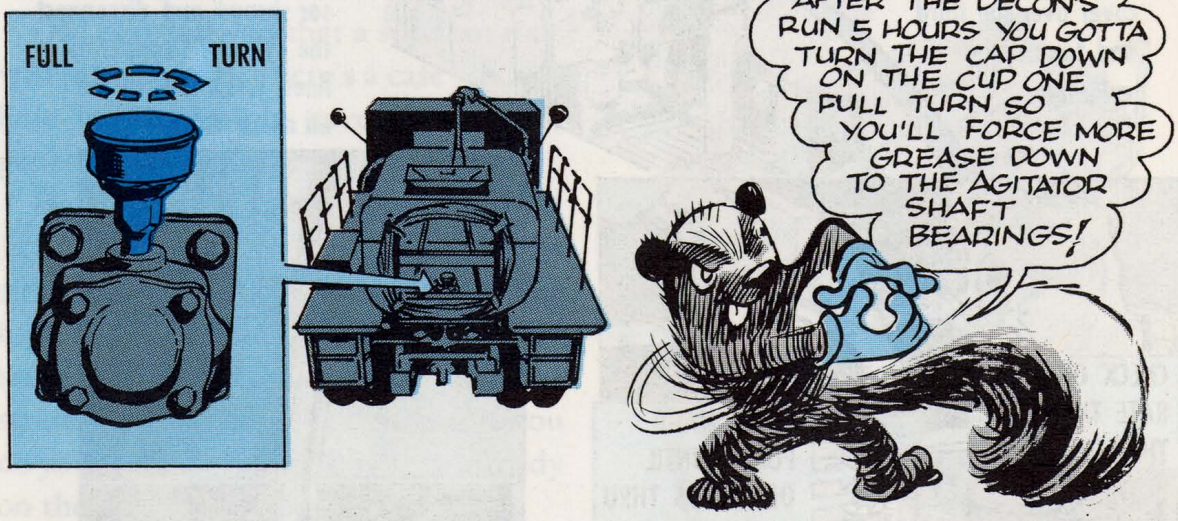
You know what to do if the drops need adjusting. Turn the threaded sleeve on the hand pump clockwise to slow up the oil drops, and counter clockwise to speed 'em up.

## DECON TROUBLE SPOTS

If you're a decon operator you'll want to know of two places that could become trouble spots.

Seems like the grease fittings on the agitator bearing assemblies are being forgotten. And when forgotten they kick up a fuss.

The cups and caps are supposed to be kept filled with GAA. FSN 9150-190-0904 (QM) will get you a 1-pound can. WP (water pump) grease, which is called for in LO 3-407 and LO 3-4230-200-12, is no longer stocked.




Regardless of how much grease's in the cap and cup, you still have to give the cap a turn to get grease down to the bearings.

When you leave the cap off altogether you can bet those bearings aren't getting the least little bit of grease, even when the cup's full.

# THE JERRY CANS

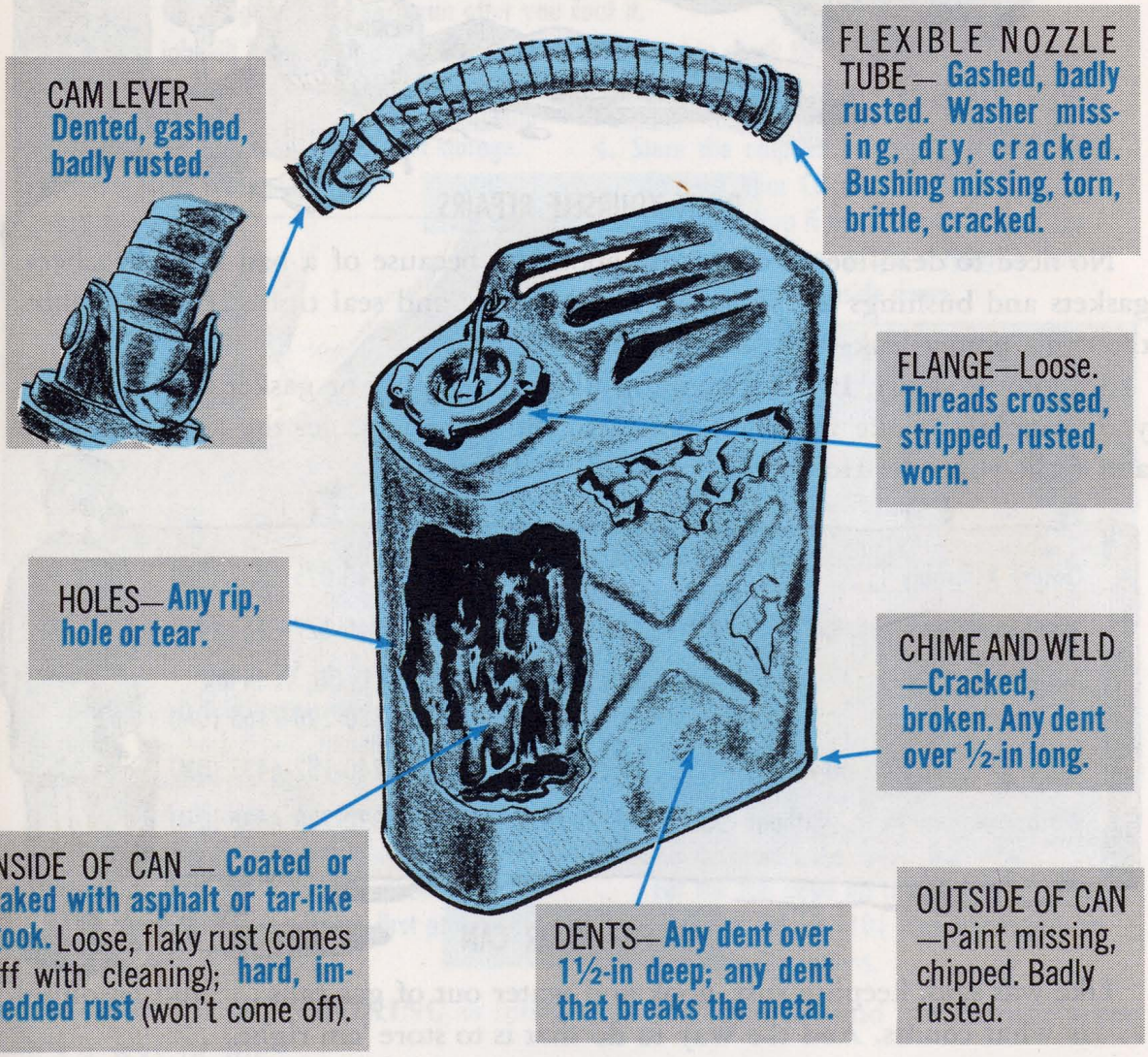
That ol' inspector's only interested in two things about your 5-gal can:

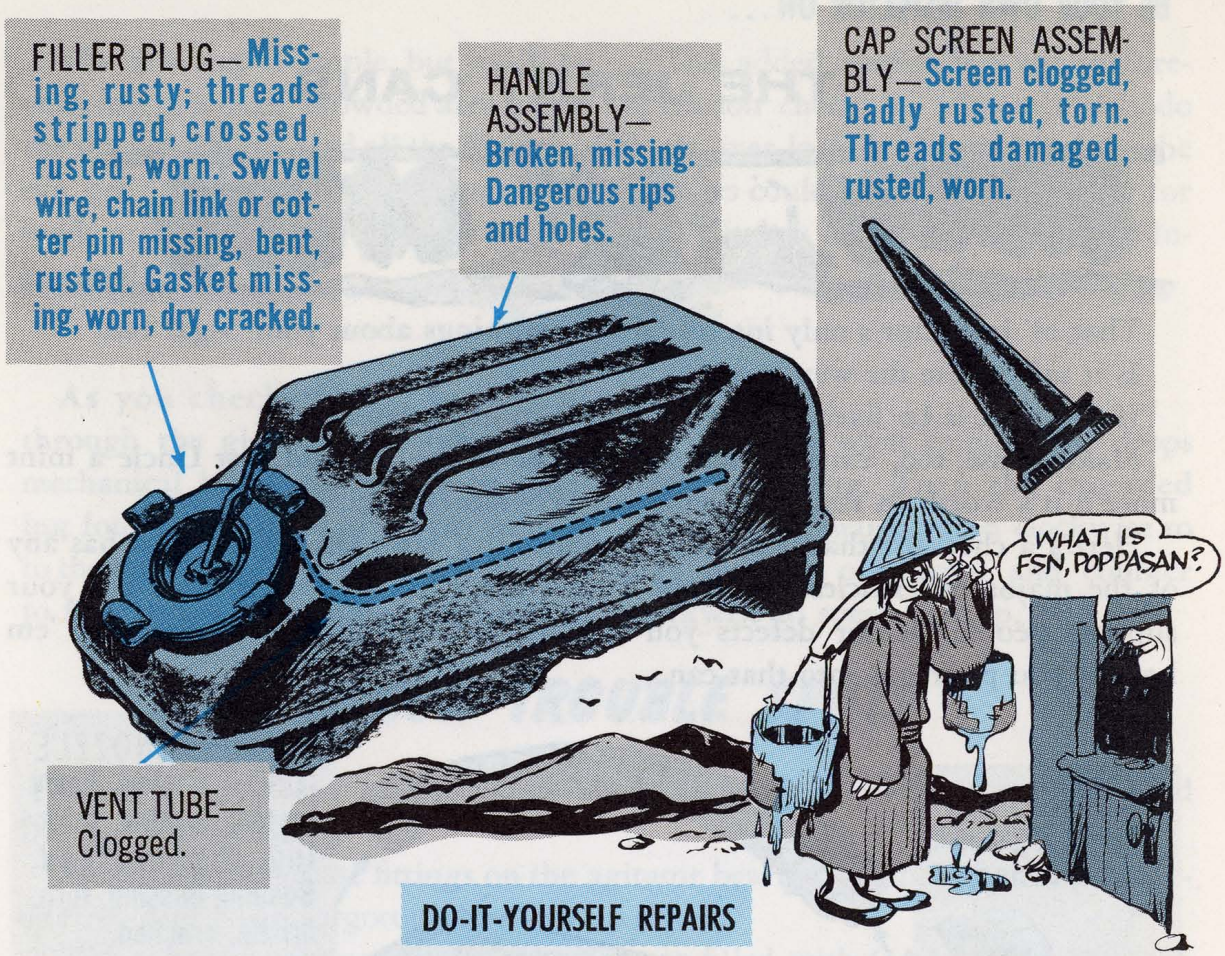
Is it safe to use the way it is?

If not, can it be fixed so you'll be able to use it later on?

Makes sense, too, 'cause if that can's not fit to use it could cost Uncle a mint more'n it's worth in fouled-up engines, generators, fuel, etc.

Here's a checklist that'll show at a glance if a can's OK or not. If it has any of the major deficiencies (in **Bold Type**) don't use it. Put it aside for your support people. Minor defects you can fix yourself. But remember, fix 'em **before** you pour gas into that can.

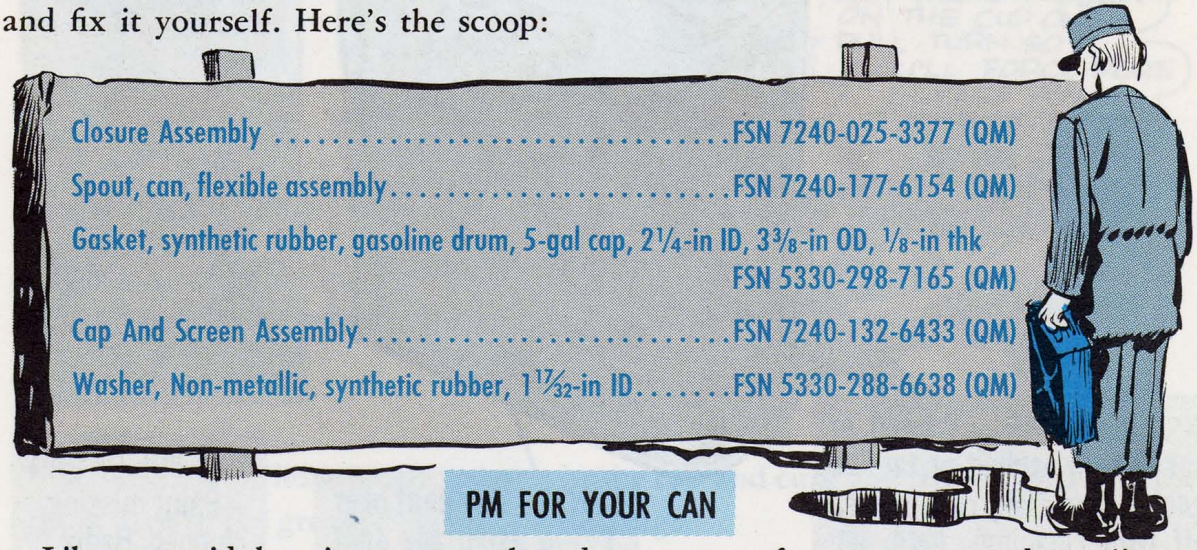





## DO-IT-YOURSELF REPAIRS

No need to deadline an otherwise good can because of a bad part. Washers, gaskets and bushings are supposed to bend easy and seal tight. If they're shot, the can's gonna leak—sure as shooting.

So, play it smart. If it's something like a filler plug or gasket that's keeping your can idle, make the right noises to the right guy, get the parts you need and fix it yourself. Here's the scoop:

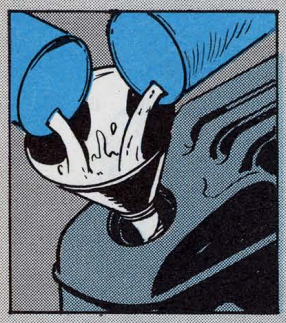



## PM FOR YOUR CAN

Like was said, keeping rust, gook and water out of gas cans . . . and gasolines . . . is what counts. And the way to do that is to store 'em right.

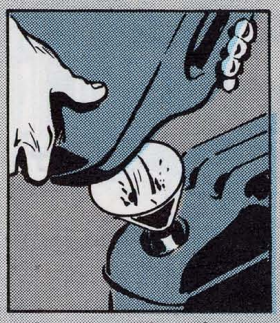
HERE'S HOW:

1. Before you do anything else, make sure the cans are clean and free from dirt, rust and foreign matter.
2. Next, coat their innards with good clean oil (general purpose, preservative, if you can get it. Or, if that's not handy, use OE-10).



Pour about 2 quarts of oil into the first can.

Close the cap and slosh it around good so the insides get covered.



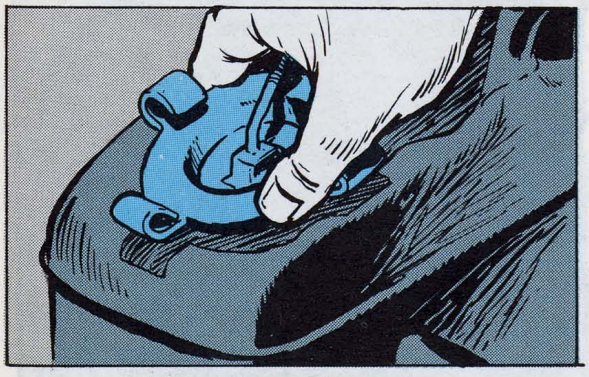
Then pour the oil into the next can.

And the next, etc.

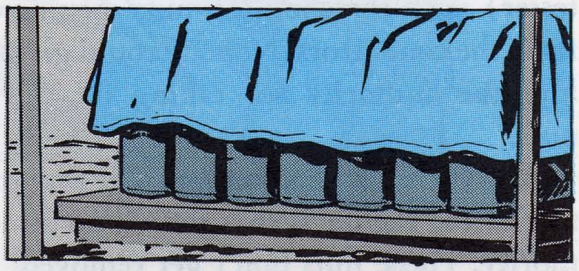
You can use the same oil over and over till it gets diluted with gasoline. Remember, though, you gotta drain the oil good from each can after you coat it.

One coating job will last a while . . . but not forever. It's smart to check the cans for rust every couple months. Of course, you know you'll have to coat the cans again every time you use 'em.

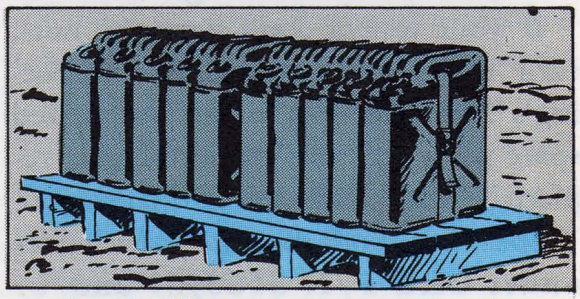
3. Close the filler caps hand tight for storage. Never leave those caps off.



4. Store the empties indoors or outside . . . whatever your CO says. Be sure to cover 'em with a tarp if they're outside. You can store 'em standing upright or lying on their sides—but never upside down.

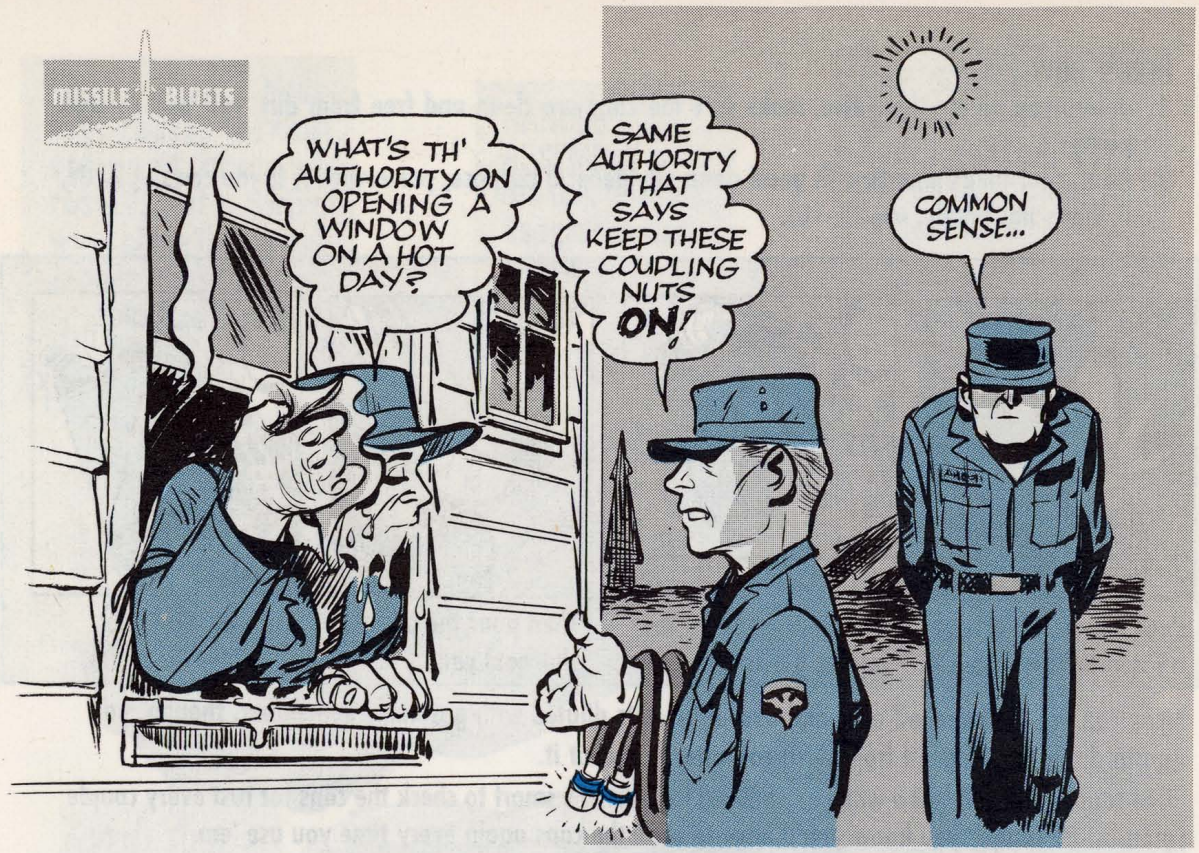


5. If you don't have many cans, you can strap 'em together in groups of five, side by side. Or, if you have a lot of them, stack 'em pyramid-style (like you used to pile blocks when you were a pup, remember?). Either way, though, be sure you put about 6 inches of dunnage (2x4's for instance) between the bottom tier and the ground or floor. Also, you'd best not stack the cans more'n 4 tiers high without first propping up the ends of the rows.



For the full dope on can care take a long squint at TM 10-1101 (Sep 55) Petroleum Handling Operations.

Another tip: **NO SMOKING** is more than a slogan around gas storage areas —it's a way of life.



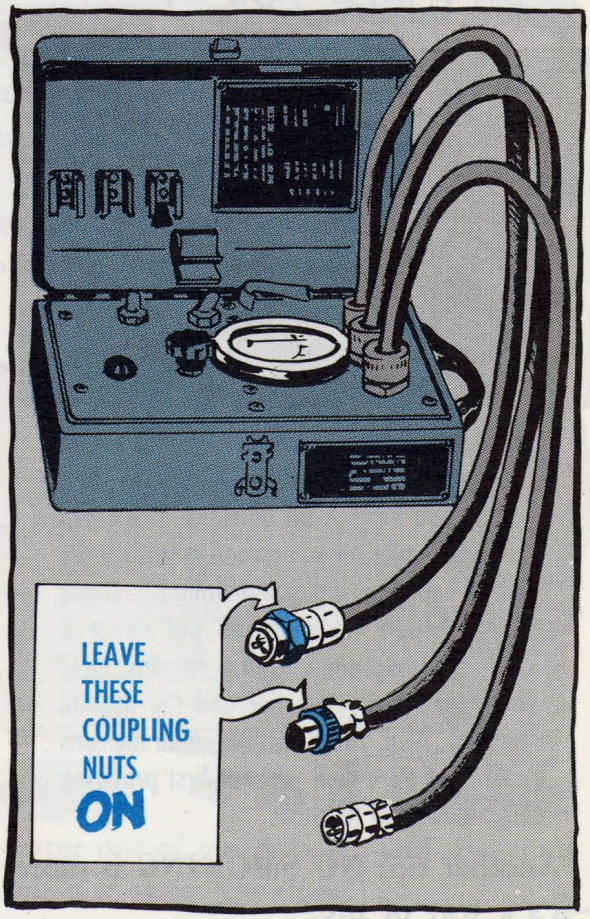

# THE NUTS STAY ON

Seems there was this inspector at a Nike-Ajax site . . . and he came across a booster igniter circuit tester (squib tester) with the coupling nuts missing from the connectors. Nobody could give him the authority for taking off the nuts.

And there's a good reason. The plain fact of the matter is that there's no authority. Those nuts don't get removed.

If your testers don't have the nuts, turn 'em in to your support unit. Seeing's how the nuts're not authorized spare parts . . . the connector gets replaced. And that's an Ordnance job.

Speaking about the tester which goes under ORD P/N 8160961 and/or 8525371, do you have Change 1 to TM 9-5012-4—the TM on launching and assembly areas checks and adjustments? It's date 20 June 1960.



# DOT'S GE-RIGHTEN

OK . . . you're running through your Nike-Hercules computer and recorder group checks.

And you flip over to para 26, page 166.3 of change 3 to TM 9-1430-251-12 and you see where it tells you to connect a clip lead between terminals 7 and 8 of the $+X_T$ network. Right?

Trouble is . . . there're no terminals 7 and 8 on the $+X_T$ network. They're on the $+\dot{X}_T$ network and those're the terminals you want to use.

So . . . if you want to get the readings to work out the way they show up on DA Form 9-33, make a mental note that there's a dot missing when para 26, page 166.3 of change 3 to TM 9-1430-251-12 talks about the $X_T$ network.

## SPEAKING ABOUT DOTS . . .

Step 19.1 on loop equalization checks in TM 9-1430-251-12 tells you to make your checks by hooking up terminal 1 of the $-HM$ network to terminal 2 of the $-HM$ network. You won't get the right reading on the control meter of the computer if you do.

What you want to do is connect terminal 1 of the $-\dot{H}M$ network to terminal 2 of the $-\dot{H}M$ network. The dots were left out by mistake.

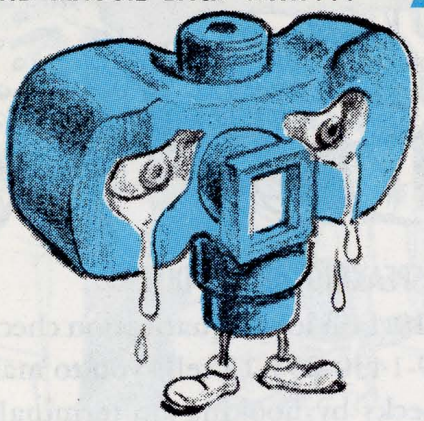
So maybe your missiles—Nike, Hawk or what have you—look real sharp with a coat of wax. But those missiles sure do shake up the guys back at depot when they come in for a new paint job.

What some outfits are doing is using stuff like electrical insulating compound (DC-4) as wax to shine the missiles. But, when they go back to depot for a new paint job, the people there just don't take a shine to the polished missiles.

Here's what happens: The missiles are put in a big vat to remove the paint. The silicones in the insulating compound or wax come to the surface of the paint remover. And as the missile is taken from the vat, the silicones latch onto the missile surface. You can't see 'em, but when the missiles are repainted, you know they're there. They keep the paint from sticking. So in a few days it starts to peel off.

In other words . . . forget about shining the missiles. They'll hit the target without it. And you'll save a lot of elbow grease—for yourself and the guy up the maintenance line.

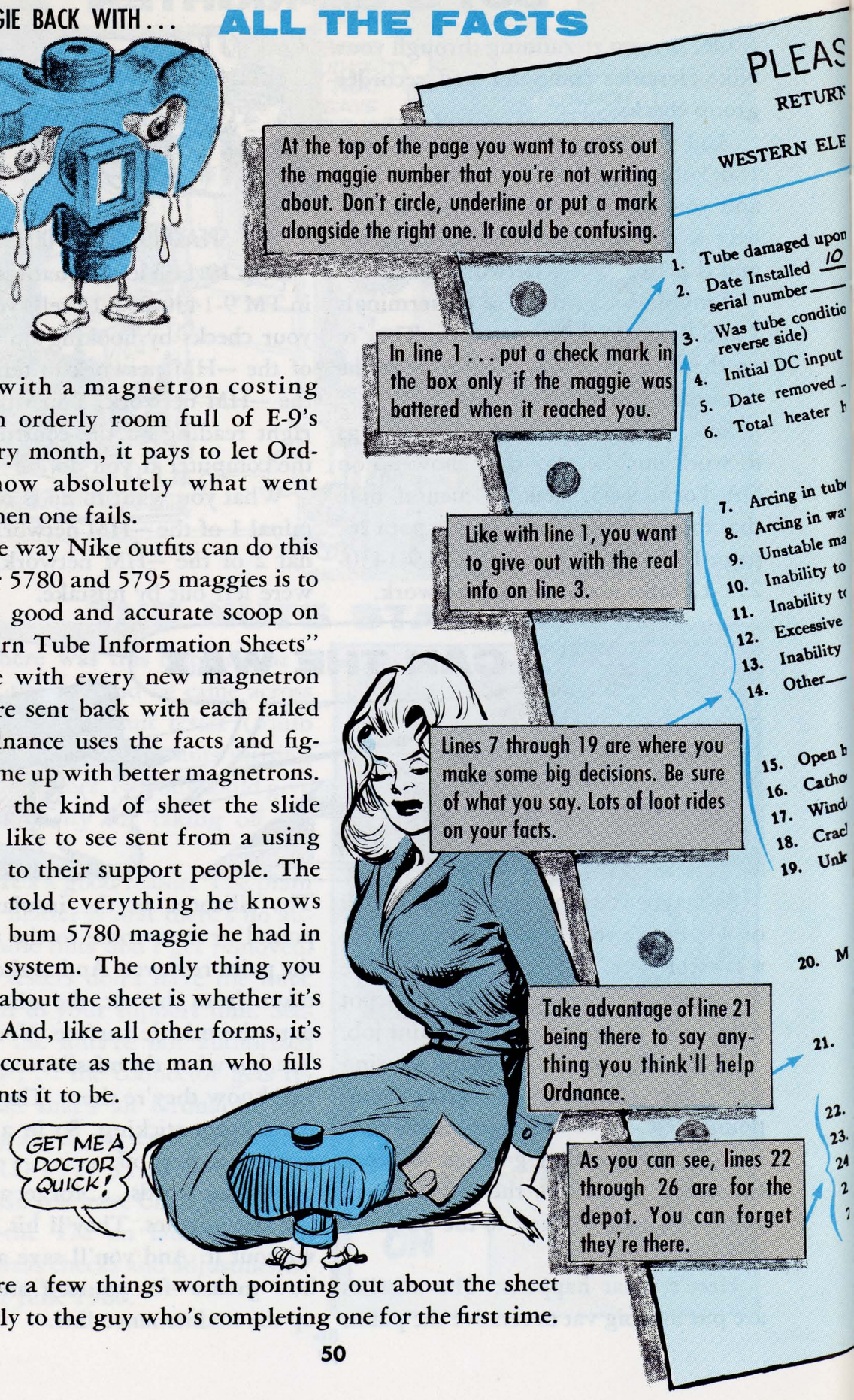
## SEND MAGGIE BACK WITH . . . ALL THE FACTS



What with a magnetron costing more'n an orderly room full of E-9's make every month, it pays to let Ordnance know absolutely what went wrong when one fails.

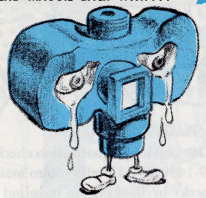
And the way Nike outfits can do this with their 5780 and 5795 maggies is to put down good and accurate scoop on the "Return Tube Information Sheets" that come with every new magnetron and that're sent back with each failed tube. Ordnance uses the facts and figures to come up with better magnetrons.

This is the kind of sheet the slide rule boys like to see sent from a using unit back to their support people. The man has told everything he knows about the bum 5780 maggie he had in his Ajax system. The only thing you can't tell about the sheet is whether it's accurate. And, like all other forms, it's only as accurate as the man who fills it out wants it to be.




There're a few things worth pointing out about the sheet —especially to the guy who's completing one for the first time.

# ALL THE FACTS



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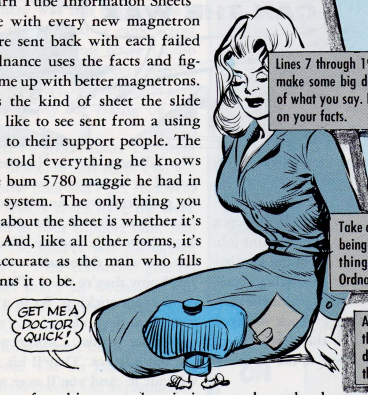


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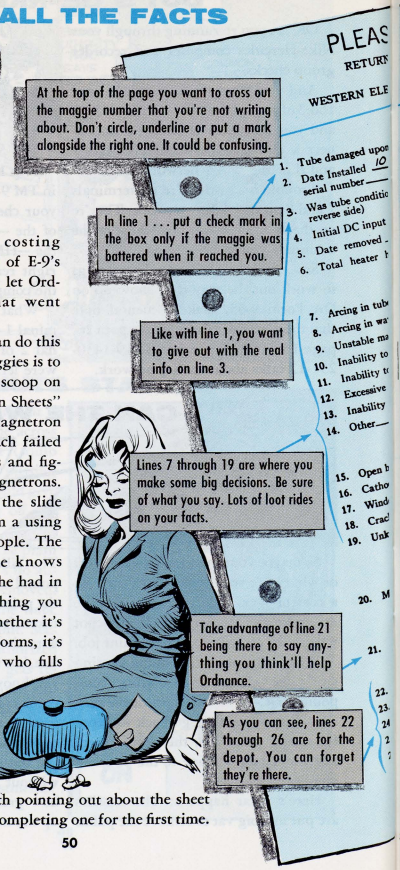



At the top of the page you want to cross out the maggie number that you're not writing about. Don't circle, underline or put a mark alongside the right one. It could be confusing.

In line 1 . . . put a check mark in the box only if the maggie was battered when it reached you.

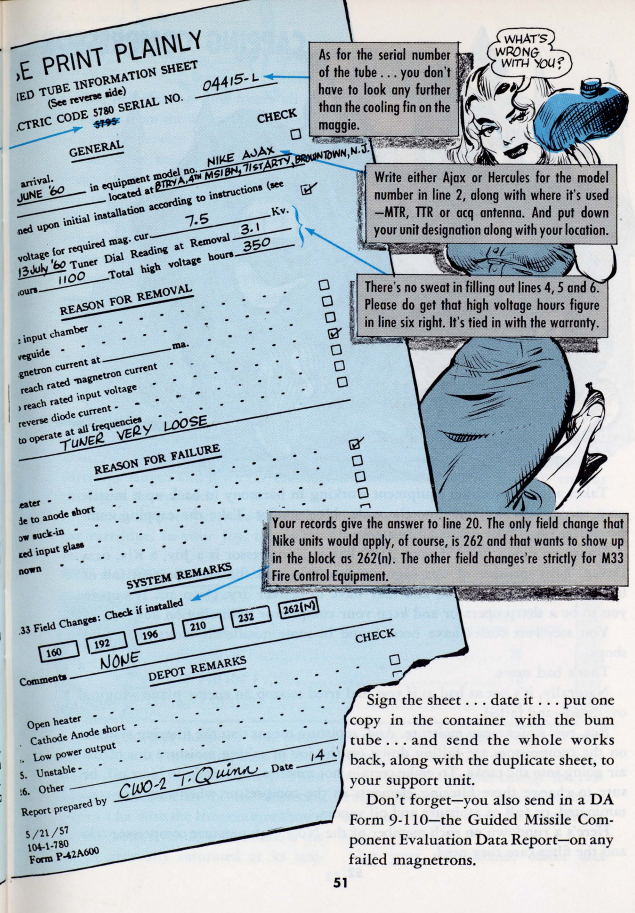
Like with line 1, you want to give out with the real info on line 3.

Lines 7 through 19 are where you make some big decisions. Be sure of what you say. Lots of loot rides on your facts.

Take advantage of line 21 being there to say anything you think'll help Ordnance.

As you can see, lines 22 through 26 are for the depot. You can forget they're there.






As for the serial number of the tube . . . you don't have to look any further than the cooling fin on the maggie.

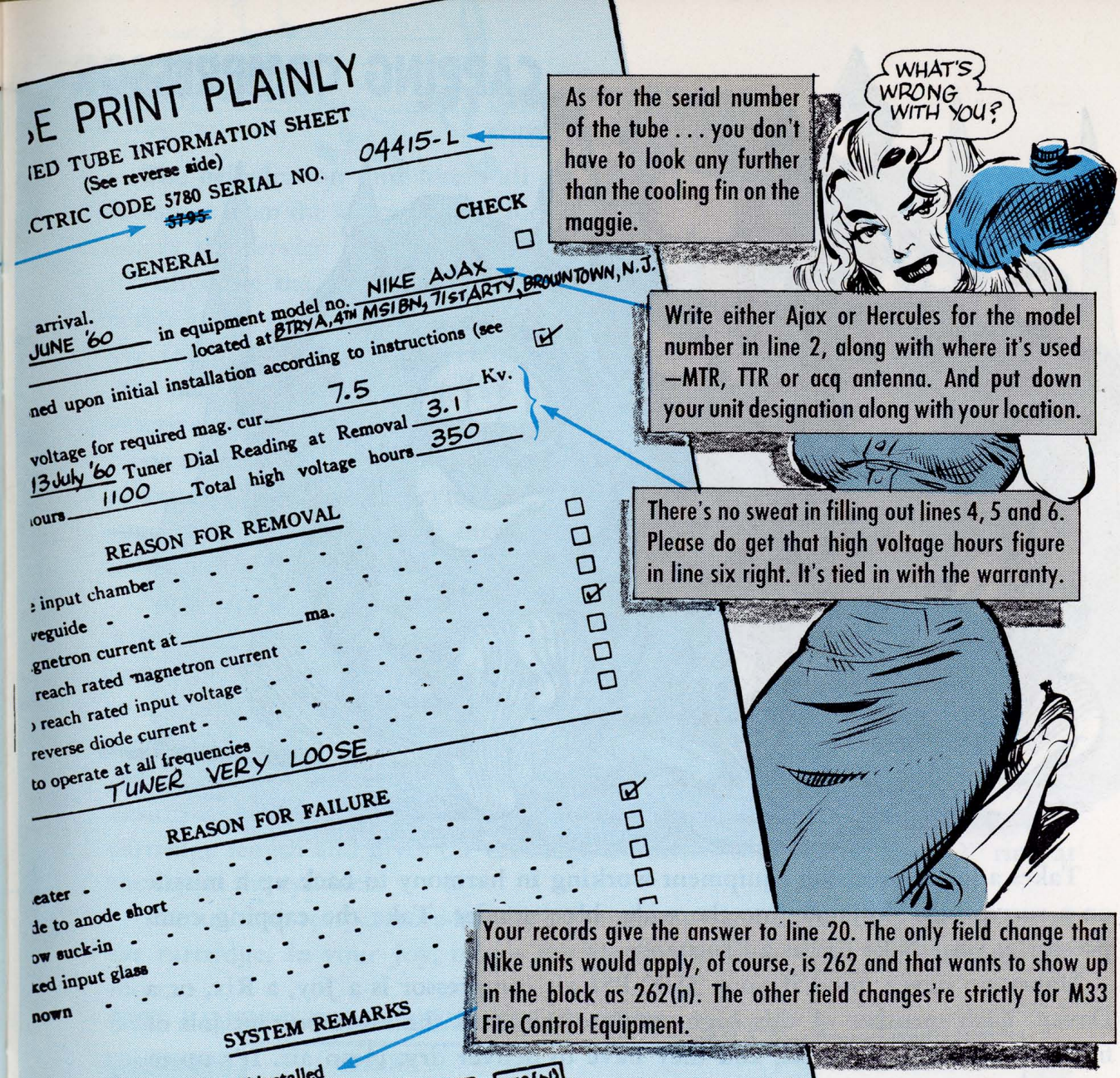
Write either Ajax or Hercules for the model number in line 2, along with where it's used —MTR, TTR or acq antenna. And put down your unit designation along with your location.

There's no sweat in filling out lines 4, 5 and 6. Please do get that high voltage hours figure in line six right. It's tied in with the warranty.

Your records give the answer to line 20. The only field change that Nike units would apply, of course, is 262 and that wants to show up in the block as 262(n). The other field changes're strictly for M33 Fire Control Equipment.

Sign the sheet . . . date it . . . put one copy in the container with the bum tube . . . and send the whole works back, along with the duplicate sheet, to your support unit.

Don't forget—you also send in a DA Form 9-110—the Guided Missile Component Evaluation Data Report—on any failed magnetrons.

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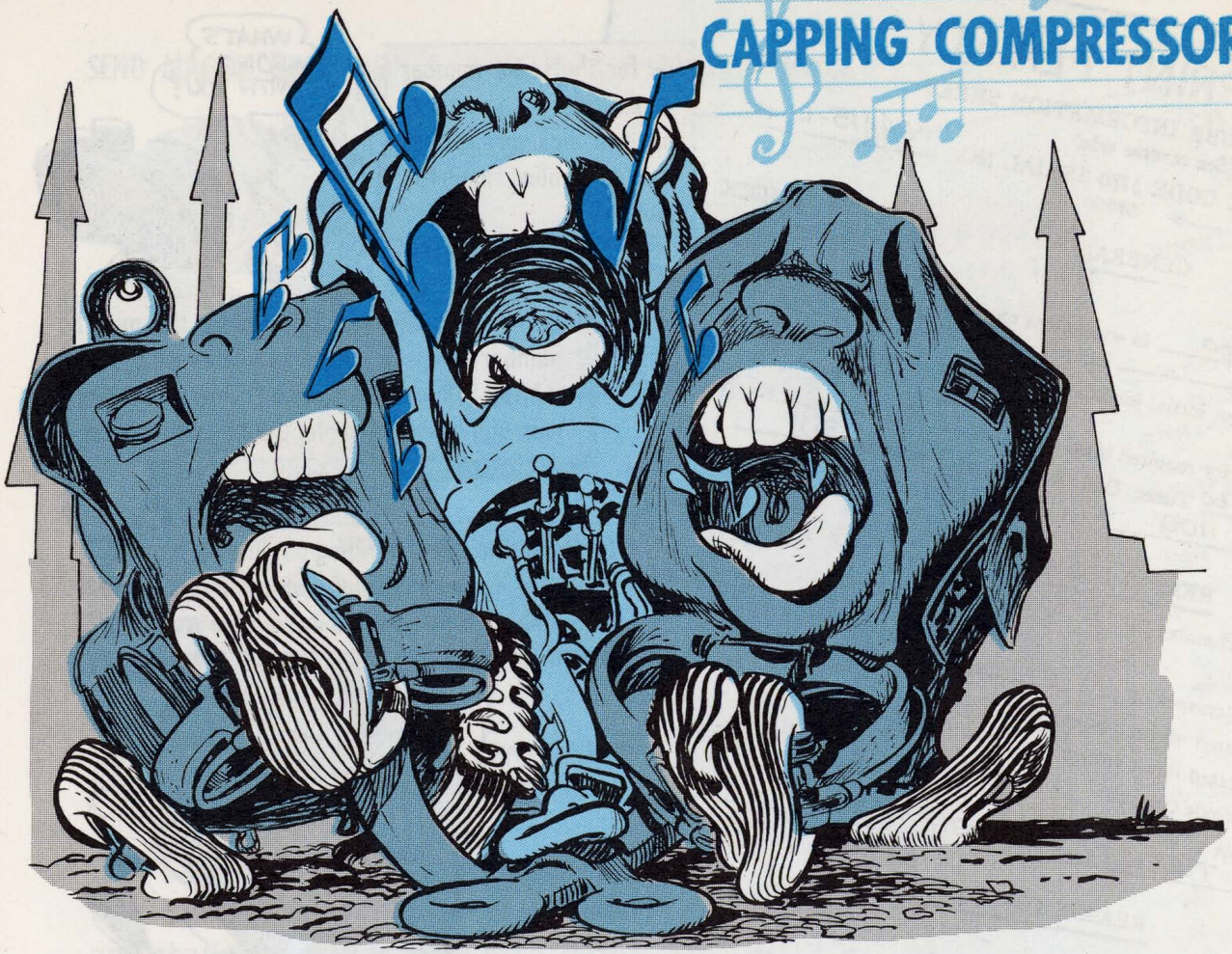
# CAPPING COMPRESSOR



Takes a lot of precision equipment working in harmony to back up a missile on a successful solo jaunt into the wide, blue yonder. Take the capping compressor at your Nike site as a f'rinstance.

Makes no never mind if your 3500-PSI air compressor is a Joy, a Rix, or a Davey. Each member of this high-pressure trio does the all-important job of filling the missile air tanks, and they have to deliver dry, clean air. It's up to you to be a sharp operator and keep your compressor humming on key.

You see, rust scales have been found in some missile air tanks in rebuild shops.

That's bad news.

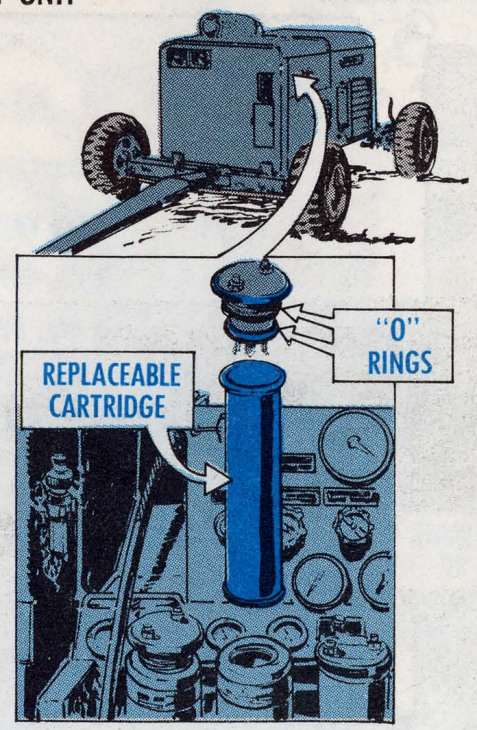
Naturally, it's not as bad as if you had tried to stop an enemy plane winging overhead—and failed.

But, rust scales mean moisture. And, moisture means that the filtering systems on the compressors are falling down on the job of taking moisture out of the air going into the tanks. To make certain hot missiles are aready to blast off, be sure to change these filtering elements in the compressor when they get contaminated, or full of moisture and oil vapors.

Here's a rundown on each member of the Nike high pressure compressor trio and the filter care they need.

## JOY COMPRESSORS

### DEHYDRATION UNIT




The dehydration unit filters all the moisture from the air receiver before it enters the service line. Its big job is to dehydrate the air by absorbing the water vapor which was not removed in the compressor condensate chambers. The unit does this by using two non-reactivating, oxygen purifier cartridges —one of which is in each of the two dehydrator cylinders. The cylinders are connected in series to give maximum dehydration and full cartridge life.

Now, each of the cylinders is equipped with two spring-loaded perforators—one at the top and one at the bottom—to open the cartridges when you install them. The spring in the top perforator puts pressure on the oxygen purifier retainer inside the cartridge to insure the right desiccant packing. The spring in the bottom perforator allows for variation in cartridge length and gives the cartridge a positive seal against the "O" ring at the top of the cylinder.

The ambient temperature in which it operates has a direct effect on the life of the cartridge. In your Joy, this is the filtering element that you'll change the most.

HERE'S A CARTRIDGE CHANGE TIMETABLE YOU CAN FOLLOW:

| AMBIENT TEMPERATURE RANGE | TOTAL HOURS OF OPERATION BETWEEN CHANGES |
|---|---|
| –65° F TO 70° F | 20 |
| 70° F TO 100° F | 10 |
| 100° F TO 130° F | 5 |

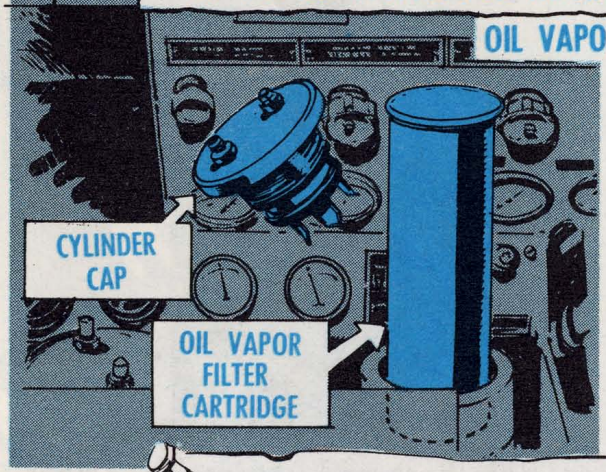
Could be that humidity and conditions are so bad that you'll have to blow down the stages more often. Then again, the efficiency of the desiccant varies a lot with the temperature shown in the table. Even in a dry climate the air is generally saturated at its temperature and pressure before it goes through the driers, so you want to play it on the safe side and change the cartridges like the table says. You blow down more often when the humidity is high.

Let your maintenance officer and

launching area officer decide. But, if there's any question about it, play safe and follow the table.

| AMBIENT TEMPERATURE RANGE | USE | FSN |
|---|---|---|
| –65° F TO 70° F | 2 OXYGEN PURIFIER CARTRIDGES | 4410-564-2546 |
| | 1 OIL VAPOR FILTER CARTRIDGE | 4310-564-2547 |
| 70° F TO 125° F | 3 OIL VAPOR FILTER CARTRIDGES | 4310-564-2547 |

## OIL VAPOR FILTER



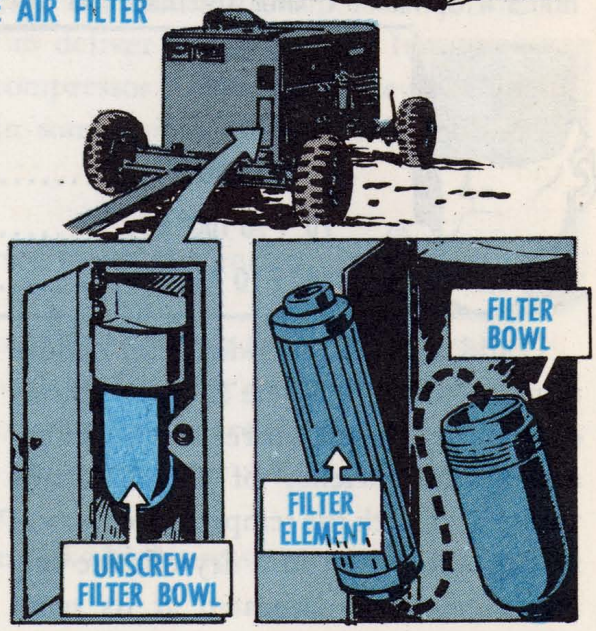

Like its name says, the oil vapor filter takes the oil out of the air before it reaches the dehydrator unit. And like the dehydrator cartridges, you've got a timetable to go by based on climatic conditions. Again, even if the filter looks good, change it according to the time-temperature guide.

| AMBIENT TEMPERATURE RANGE | TOTAL HOURS OF OPERATION BETWEEN CHANGES |
|---|---|
| –65° F TO 70° F | 100 |
| 70° F TO 100° F | 50 |
| 100° F TO 130° F | 25 |

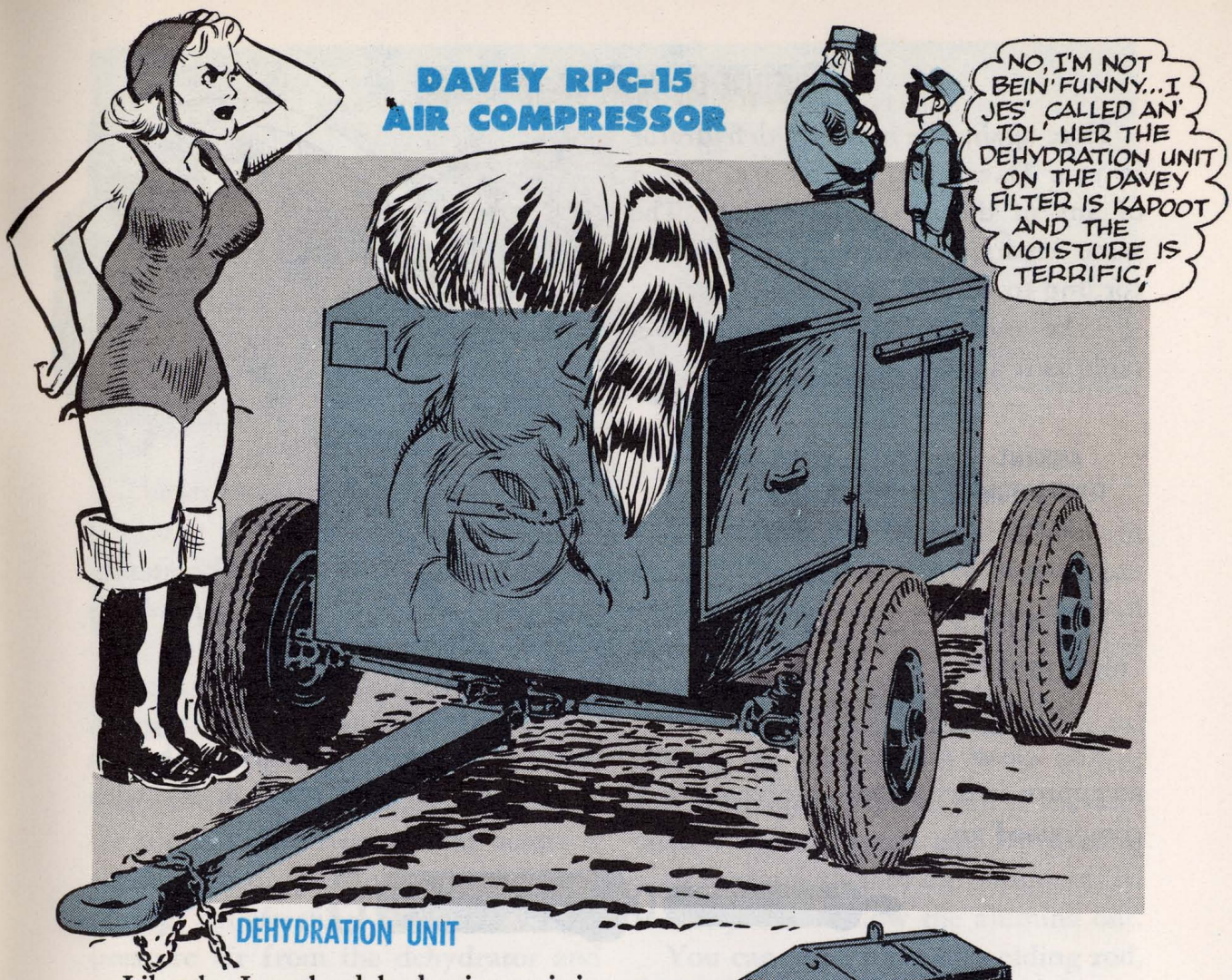
## HIGH PRESSURE AIR FILTER

The high pressure air filter is a dry-type unit that has a replaceable paper filtering element. It's hooked in line between the dehydrating cylinders and the priority valve. This unit filters out any foreign material or dust that might enter the compressor or missile controls.

Check out the element in the high pressure air filter every 25 operating hours. If it looks dirty . . . change it. But, play it safe here, too. Even if the element still seems OK—don't let it go more than 50 operating hours without change.



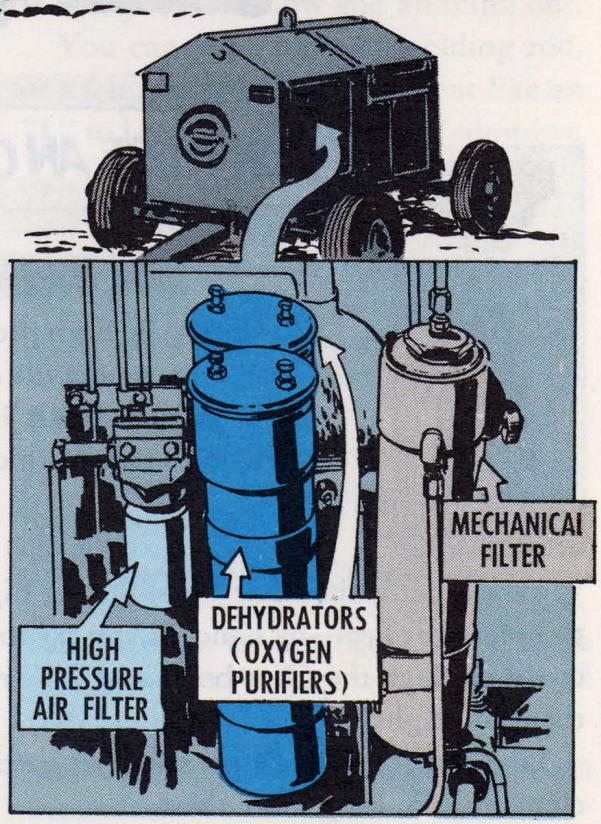
## DAVEY RPC-15 AIR COMPRESSOR




DEHYDRATION UNIT

Like the Joy, the dehydration unit in the Davey filters all the moisture from the air before it enters the service line. It dehydrates the air by absorbing the condensation which was not removed in the compressor condensate traps. It does this by using a mechanical filter and two dehydrator cylinders which remove oil and water particles. Each of the cylinders contains a non-reactivating, oxygen purifier cartridge. A high pressure filter is also used to take out foreign material and desiccant dust that might damage control components.

And, again, like the Joy compressor, the two cylinders are equipped with spring-loaded perforators to open the cartridges when you install them.

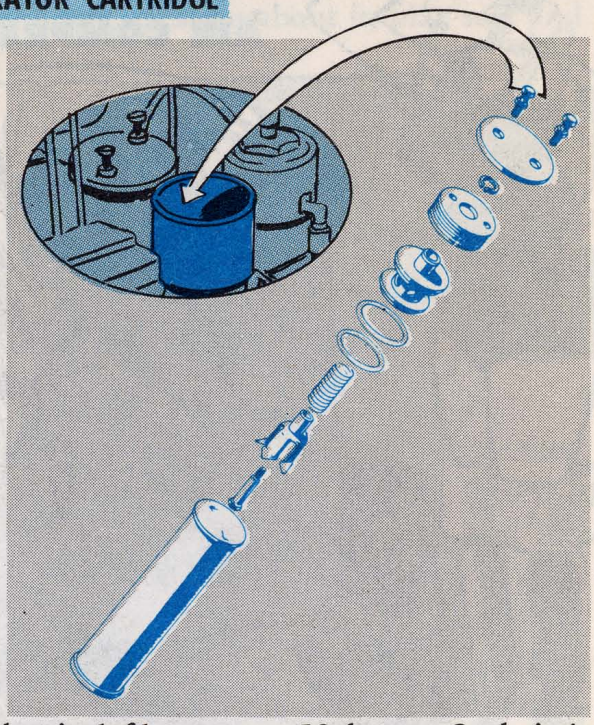


## MOISTURE DEHYDRATOR CARTRIDGE

Here again, the moisture dehydrator in your Davey gets the most attention of any of the filtering elements. The same changing schedule applies—according to climate and conditions.

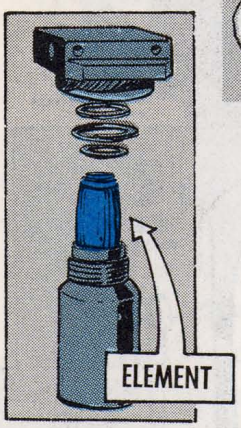
Take another look-see at the timetable as it applies to the Davey:

| AMBIENT TEMPERATURE RANGE | TOTAL HOURS OF OPERATION BETWEEN CHANGES |
|---|---|
| –65° F TO 70° F | 20 |
| 70° F TO 100° F | 10 |
| 100° F TO 130° F | 5 |



## MECHANICAL FILTER

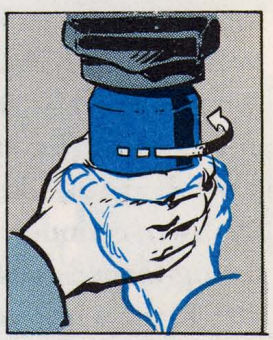
You clean the element in the mechanical filter every 50 hours. Soak it in an approved dry-cleaning solvent for about 45 minutes, then blow it dry with compressed air.




## HIGH PRESSURE AIR FILTER

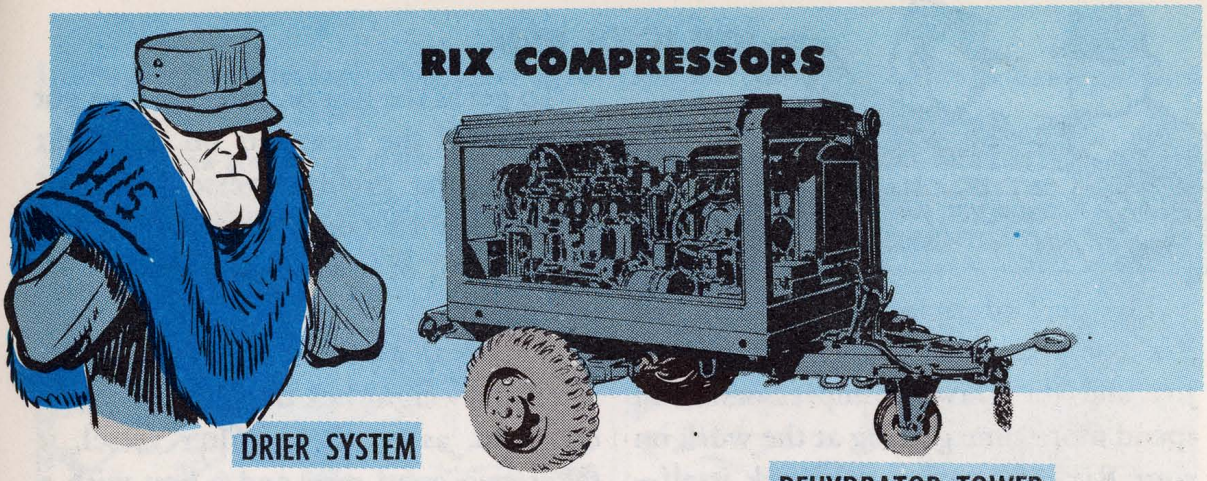
Check the high pressure air filter every 25 operating hours. You replace it if it's dirty . . . and even if it looks good, don't let it go more than 50 operating hours without changing.

Don't attempt to clean the element—replace it.



You replace the filter bowl on the high pressure filter by tightening it firm—by hand. If you try to wrench it tight, you could damage the filter bowl and "O" ring seals by making them too tight.

Like the Joy, there's no sweat in getting at these filtering elements. So, keep after them.




DRIER SYSTEM

The drier system consists of two dehydrator towers containing activated alumina for absorbing moisture from the high pressure air built up by the compressor. While one tower is in service for drying, the other tower is being reactivated by hot air circulated by the reactivator pump. A prefilter, also using activated alumina, is used to take oil and moisture from the air before it reaches the dehydrator tower for final drying. An afterfilter receives the high pressure air from the dehydrator and removes any dust particles before final delivery of the air to the service line.

DEHYDRATOR TOWER

You replace the activated alumina in the dehydrator towers when it becomes contaminated. Oil or moisture observed in the final air outlet will clue you that the alumina is contaminated.

You can remove the alumina by removing the plug on top of the towers and inserting a pipe to direct the alumina away from the rig. By routing high pressure air into the bottom of the tower, you can blow the alumina out.

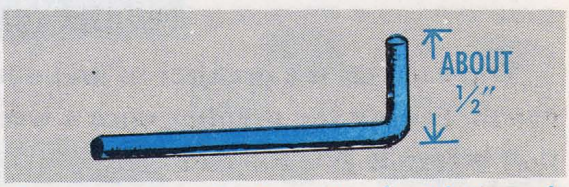
You can use a piece of welding rod, or even a coat hanger wire bent like an "L" to break up the chunks of alumina.

## TRY SOME VACUUM

Or better yet, with a little resourcefulness and a housekeeper's suction, you can get the alumina out of the tower from top to bottom. All you've got to do is borrow the vacuum cleaner from the radar section.

Then, you latch onto a piece of ¾-in hose and tape it to the end of the vacuum hose. You'll find the vacuum cleaner hose itself is too big to fit inside the filler opening.

You can make use of the welding rod or coat hanger wire here, too, before you hook up the vacuum. But, go gently when you're poking and scraping. You don't want to damage the screen at the bottom of the tower.




Once you've got the hose rigged, stick it on the opening and turn on the juice. And, man, you'll really have pull.

Nothing left to do then except refill the tower with fresh, activated alumina.

## SOME MUSCLE WORK

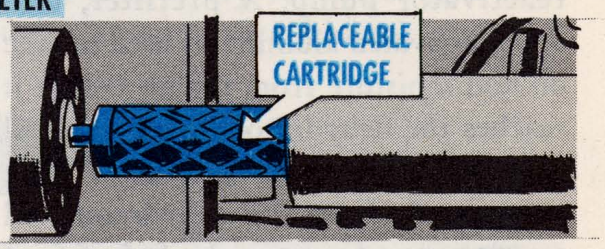
The deal of changing filters in the Rix compressor is different from the Joy and the Davey compressors. You spend more time getting at the work on your Rix than doing the work itself—and since the work calls for heavy-duty tools, your support people usually take care of changing those filters and the drying tower alumina while the compressor is in the shop for other support work.

To get at the Rix prefilter, you've got to take off the hex nuts on the eight bolts on the prefilter vessel. Each of these hex nuts takes from 500 to 700 foot-pounds of torque—and that's a lot of muscle.

Same deal applies to the vessel on the afterfilter—eight hex nuts have to come off. And, as on the prefilter vessel, it takes two good men and a boy with a big wrench with a pipe extension on it to loosen the nuts—and tighten them when the unit is reassembled.

You replace the gaskets each time you disassemble these vessels to be sure you get a tight seal.

## PREFILTER




The prefilter is in a cartridge which may be replaced whenever the alumina becomes oil-soaked. The only way you can tell if it's oil-soaked is to take it out and inspect it. Under normal conditions, you'll do this every four to six weeks. This time should be shortened if the compressor is using a considerable amount of oil. You're given a spare prefilter cartridge so that you can make an exchange and keep the rig in operation while the replaced alumina is being reactivated—either by cleaning or replacement of the alumina. As long as you can get new alumina, discard the old alumina instead of cleaning it. A contaminated prefilter will cause repeated contamination of the dehydrator tower. You can avoid contamination of the dehydrator tower to a large extent by paying attention to the prefilter.

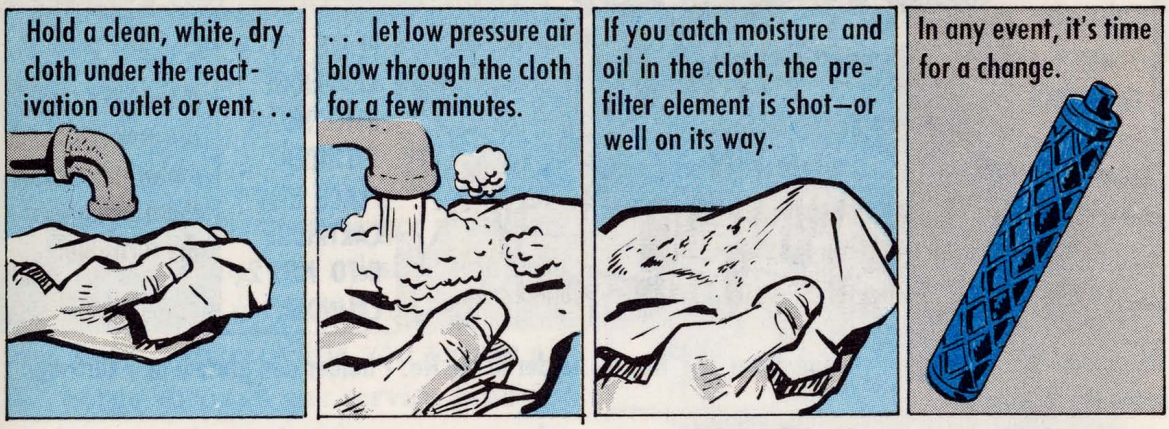
## PREFILTER CONTAMINATION TEST

You can test the prefilter to find out if the filtering system is getting contaminated. Testing the prefilter once a week will allow you to catch the contamination before it gets too bad.

The rest is as easy as one-two-three—and is easy on the back and the muscles, too.

1. Start your Rix on free load—which means all the blowdown valves are open. With the blowdown valves open, pressure can't build up.

2. Bleed the low pressure out of the reactivation air outlet, through valves 1 and 5, or 2 and 6.




OK, now that you've caught a lot of moisture and oil vapor in the cloth, you know doggone well that the prefilter element is bad—but, more important you've learned something else. All that excess moisture and oil vapor has probably contaminated the alumina in the drying towers, overloaded the afterfilter, and has passed right on through into the missile air tank.

So, no matter if your Rix doesn't need any other work in the support shop, a no-go test means to send it to support for a check and change or cleaning—as needed—of the prefilter element, afterfilter element, and the alumina in the drying towers.

It'll also give your support unit a chance to spot other things by checking out the filtering system.

## AFTERFILTER

The afterfilter removes any alumina dust or foreign particles that may get past the dehydrating towers. When you find excessive dust, oil or moisture in this filter, it tells you that the dehyrating towers need servicing.

## TIME FOR CHANGE

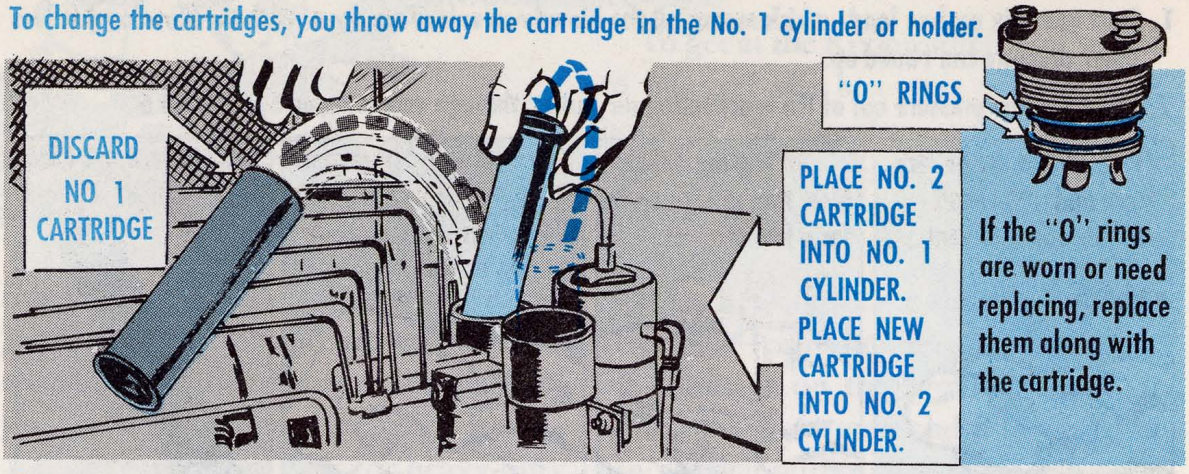
It's easy to let filter changing slip by whether you've got a Joy, Davey, or Rix. The air compressors will still run—just as if the filtering systems were working right.

But, the missile air tanks are getting bad air.

## JOY AND DAVEY SCHEDULING

Before you start your Davey or Joy air compressor, eyeball the hourmeter. Then, glance at the record of the last dehydrator cartridge change that's listed on the instruction plate on the control panel lid. Using the timetable as your guide, change the cartridge if the next period of operation will go over the remaining useful life of the cartridge.

To change the cartridges, you throw away the cartridge in the No. 1 cylinder or holder.




Then, you transfer the cartridge from the No. 2 holder to the No. 1 holder and place a new cartridge in the No. 2 cylinder.

At the after-operation check, give the hourmeter and the dehydrator-change-record another glance. Change the cartridges if it's necessary and put the new hourmeter reading on the instruction plate.

You can follow the same procedure when you check out the oil vapor filter on your Joy.

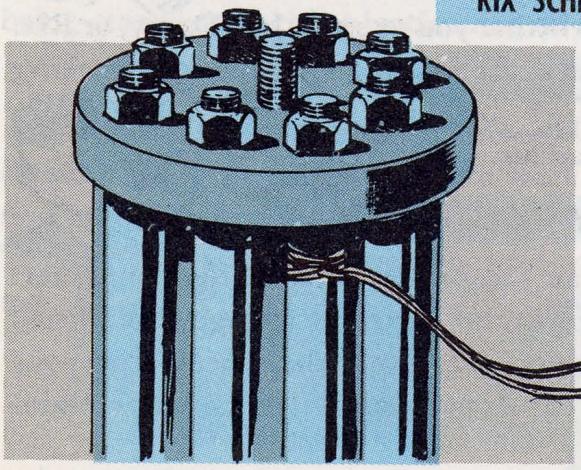
## TAG IT

You don't have any table to go by on when to clean the mechanical filter on the Davey. So, grab a little slip of paper, and write the hourmeter reading when the filter was last cleaned . . . and the hourmeter reading when the element needs cleaning again. Fasten the paper with transparent cellulose tape right on the filter.

Naturally, if the filter needs cleaning before 50 hours, clean it and put the new hour readings on the tag.

Tag the high pressure filters on your Davey and Joy the same way.

## RIX SCHEDULING




On the Rix, there's no for-sure schedule to follow. So, make a tag and tape it on the prefilter and afterfilter vessels, and on the drying towers. Write on the tag the hourmeter reading when the filters and activated alumina were last changed.

Now, every time your Rix goes to

Support—no matter what for—note on the DA Form 811, Work Request and Job Order, the last change times for the filtering elements and the alumina. That'll give the Support people a lot of help in deciding whether the stuff in the filtering system needs changing.

As an additional check on changing filters—make a note on the Operational Log for your rig every time you clean or change the elements in the filtering system.

## THE RIGHT DEW-POINT

To be sure that you've got moisture-free air entering the missile, you run the compressor up to around 3,000 PSI and hold it there while you let the air discharge through the service hose for at least an hour before you cap the missile.

Remember, you don't crack the service line valve until you open the hose valve. Be sure to sandbag the line so it can't whip around like a 'gator with a mad on. Playing it safe makes good sense. It's bad enough to bust the hose valve, but you and your buddies could also be on the receiving end of the whip.

## MAINTENANCE TIPS

Keep checking the filtering system on your rig, keep those hourmeter tags on the filters and towers, and the readings on the instruction plates up to date. Same goes for recording the changes on your Operational Log.

**ALWAYS** open all valves and drain all the air from the compressor before you change filters or disassemble any part of it.

**ALWAYS** use a non-oil base cleaning solvent for cleaning the mechanical filter on your Davey.

**ALWAYS** inspect the "O" rings when you replace a dehydrator cartridge or filter.

- On your Joy and Davey compressors—if the perforators in the dehydrators become dull, you can sharpen them for easier opening of the desiccant cartridges.

- If the priority valve in your Joy or Davey won't work because of dirt, this shows that the high pressure air filter needs changing.

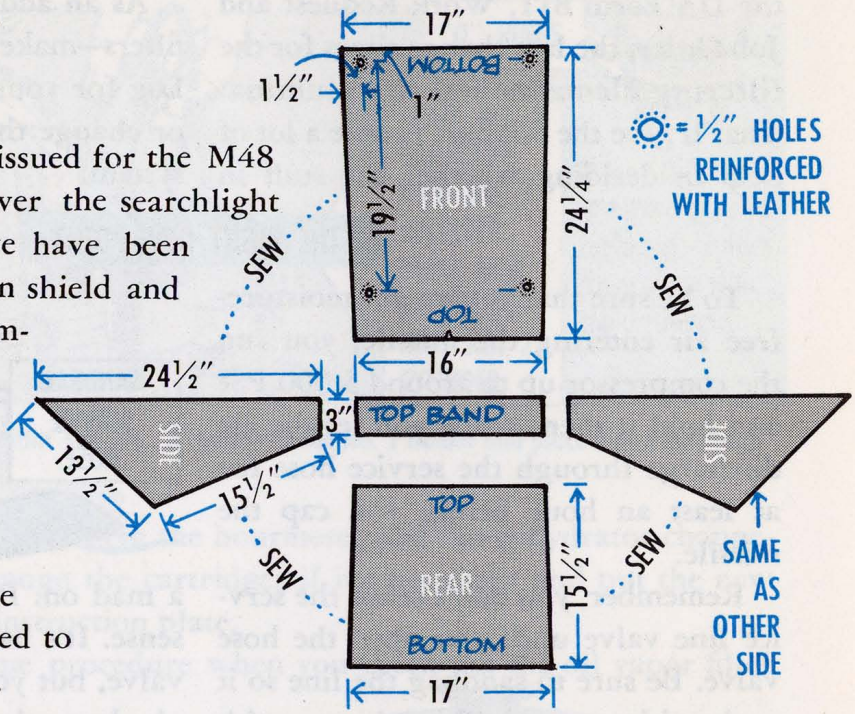
## THAR SHE BLOWS

Then, when your missile rises into space and wings off after its prey, you'll know that your compressor and filter care made the pay-off possible.

# SEARCHLIGHT BRACKET COVER

Dear Editor,

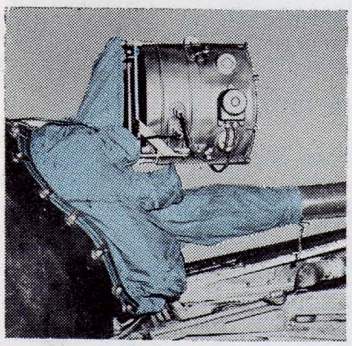
The gun shield covers issued for the M48 series tanks won't fit over the searchlight mounting bracket, so we have been protecting both the gun shield and the bracket with a custom-made cover. This is the way it is made . . . Cut five pieces of canvas and position them as shown in the diagram. Sew them together and you've got a canvas hood tailored to fit the searchlight mount.

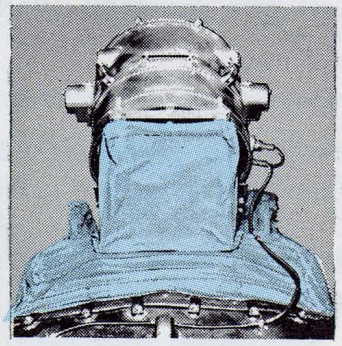


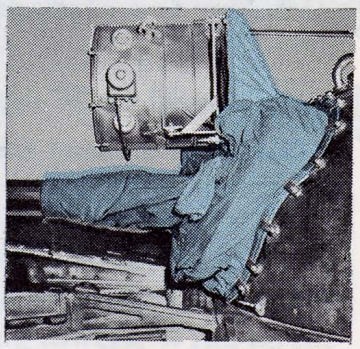

Remove the large leather patch and center spring protector from the under side of the gun shield cover. Using the needle holes as a guide, sew the front of the hood on. Then sew down each side and across the back. Double-seam the hood to the cover to make it stronger.

When you sew the hood, position it so its back side is about ½-inch in front of the last standing seam in front of the top iron.

Cut 3 inches from the loose end of the center spring and band the loop on end like it was originally. (When it's mounted it looks like this):





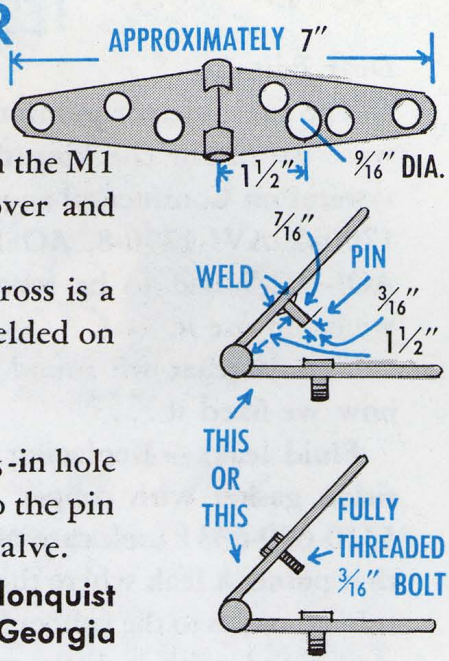


This combination gun shield and searchlight mount cover is both neat in appearance and practical in operation, and you can make it if your area commander gives you the OK.

**Senior Officers' Preventive Maintenance Department**

**US Army Armor School**
**Fort Knox, Kentucky**

# VALVE PUSHER




Dear Editor,

I've seen different gadgets for opening the valve on the M1 rifle gas cylinder lock screw so that you can look over and clean the lock screw.

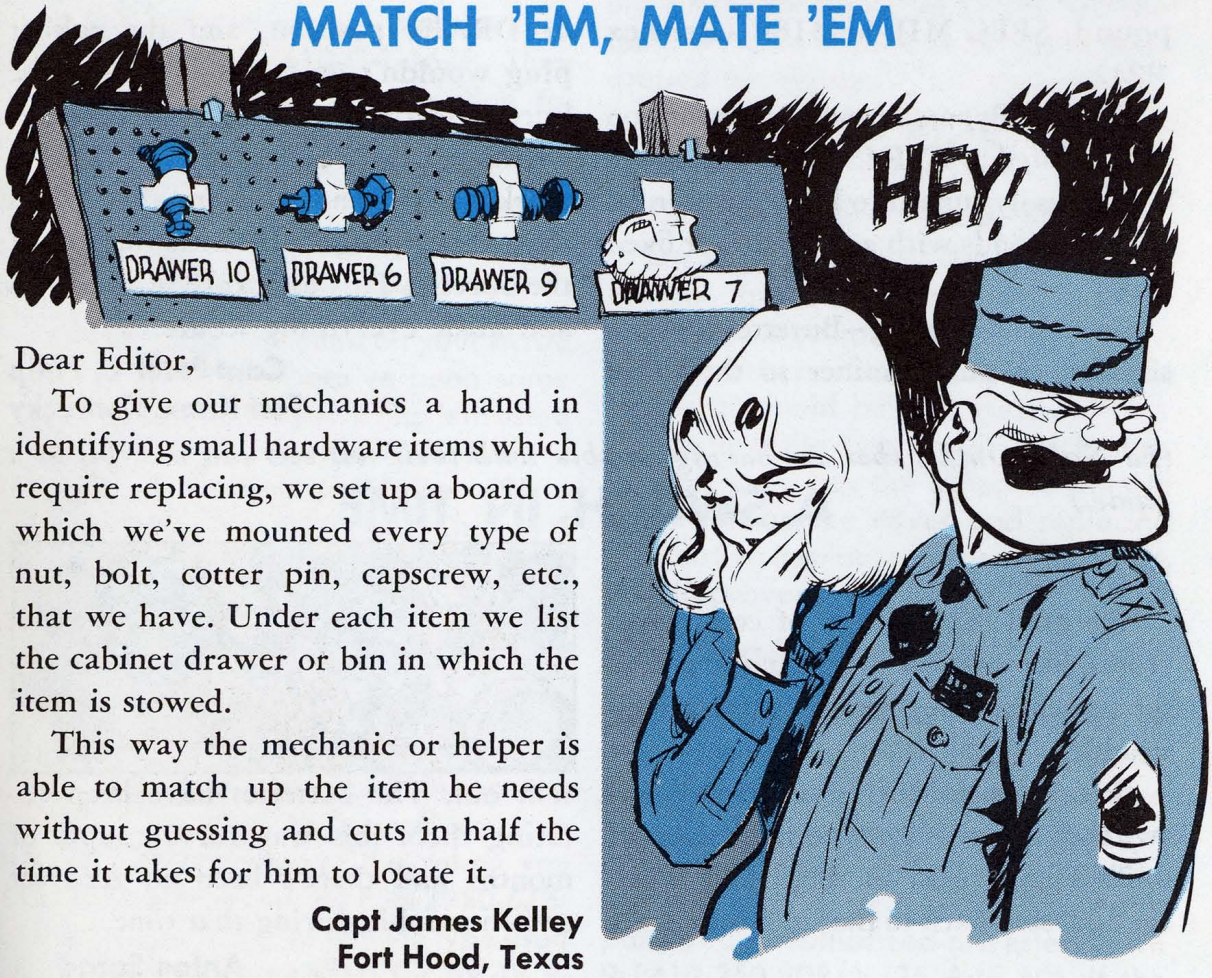
But one of the best and simplest deals I've run across is a hinge that has a hole drilled in one half and a pin welded on the other half.

These sketches show how it's made.

All you have to do is slip the lock screw into the $^{9}/_{16}$-in hole and then close the two halves of the hinge together so the pin or bolt goes into the lock screw and pushes out the valve.

**K. W. Hallonquist**
**Fort Benning, Georgia**

# MATCH 'EM, MATE 'EM




Dear Editor,

To give our mechanics a hand in identifying small hardware items which require replacing, we set up a board on which we've mounted every type of nut, bolt, cotter pin, capscrew, etc., that we have. Under each item we list the cabinet drawer or bin in which the item is stowed.

This way the mechanic or helper is able to match up the item he needs without guessing and cuts in half the time it takes for him to locate it.

**Capt James Kelley**
**Fort Hood, Texas**

*(Ed Note—A natural matchmaker. Instead of using a board, some outfits just attach a sample of the hardware on the cover of the drawer or in front of the bin the items are stocked in.)*

# TEST YOUR TEST KIT

Dear Editor,

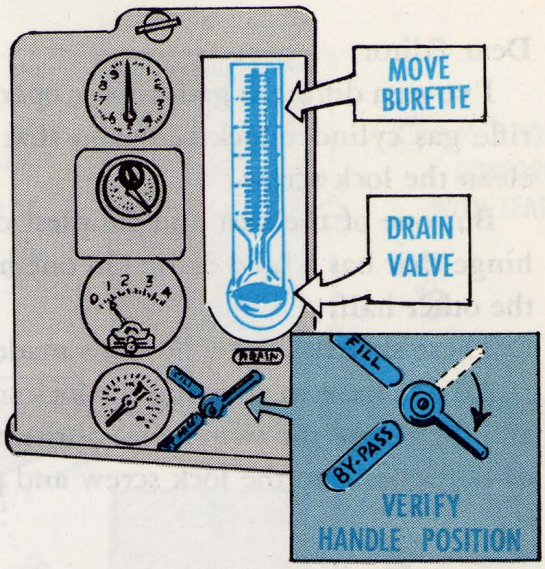
The fuel injector pump tester kit we were issued for checking the injection systems on Continental engines AVSI-1790-6, AVI-1790-8, AOSI-895-5 and AOI-402-5 had to be repaired before we could use it.

This is what we found wrong and how we fixed it . . .

Fluid leaks — Replacing the composition gasket with copper gasket FSN 5310-699-6331 took care of the leak at that point. A leak where the fuel return tube connects to the rubber burette plug was cured with a little sealing compound, SPEC MIL-S-45180 (Permex #2).

Fill and Bypass Handle—Screwed on so it pointed to BYPASS when the valve was actually turned to FILL position. A couple seconds with a screwdriver fixed this.

Burette Mounting—Burette was positioned in the container so the drain




valve couldn't be turned to either FILL or DRAIN position, and the rubber plug wouldn't go far enough into the burette to prevent leaks. When we repositioned the burette, the drain valve worked right and we were able to put the rubber plug flush with the top of the burette. This took care of the leaks and made everything secure.

**Capt Peter L. Philp**
**Fort Knox, Kentucky**

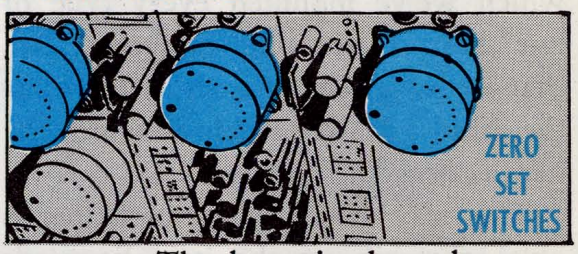
*(Ed Note—Outfits that are having trouble with their test sets can use this as a guide.)*

# A SWITCH IN TIME

Dear Editor,

We used to have lots of complaints from Nike units in this area about zero set switches. They were always giving trouble.

But, now each site sends several switches every so often to their support unit. They work on them and when they get sent back to the sites, others are

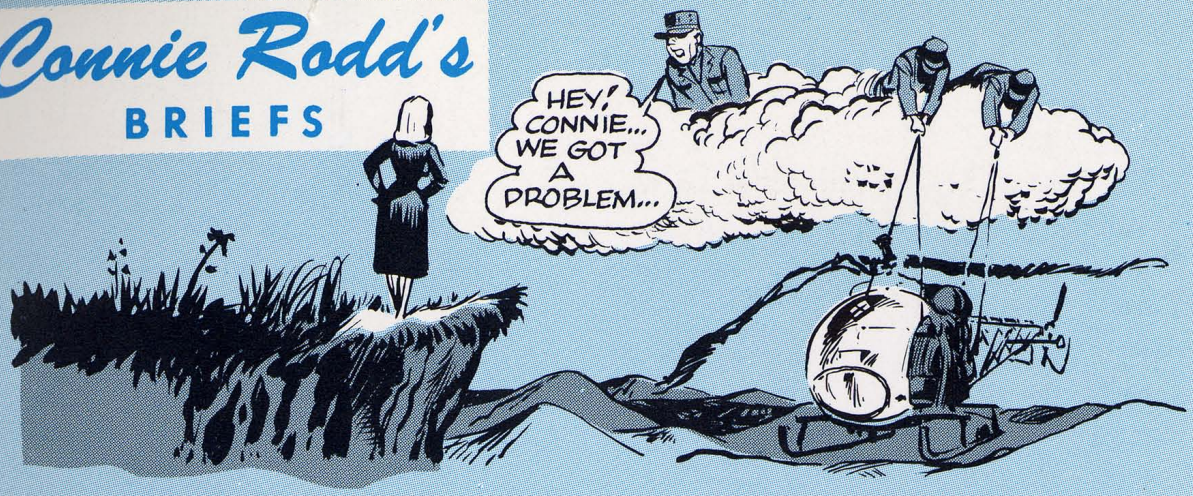



sent out. The batteries have been rotating them this way for a couple of months and there's been no zero set switch trouble during that time.

**Anton Sarge**
**Fort Bliss, Texas**

*(Ed Note—Sounds like something other Nike outfits might want to try—as long as their support units'll go along with the idea.)*

# Connie Rodd's BRIEFS




## New mine detector manual

If you've got Mine Detector Sets AN/PRS-3, -3A, -3B, -3C, or -3D—but no pubs came with 'em—ask your support unit for Preliminary Maintenance Support Manual 7610-C-1-1679. They can get copies with a requisition to: Commanding General, U. S. Army Engineer Maintenance Center, PO Box 119, Columbus 16, Ohio. ATTN: EMCDD.

## Wrecker ove

Got the tools you need on your M108 or M62 wrecker? There've been some changes made, and you'll find 'em listed in changes to the vehicle TM's. Have a look-see at Change 5 (11 Dec 59) to TM 9-8022 on the M108 and Change 5 (17 Nov 59) to TM 9-8028 on the M62.

## Mule mag mixup

Don't go off the deep end if you don't get that impulse-type magneto that TM 9-2320-213-20P (26 Apr 60) on the M274 Mechanical Mule says you can have. 'Tain't ready yet. So, when you need a new mag, ask for FSN 2920-678-4647. This should give you the type used with the vent lines called for by TB 9-2320-213-35/1 (1 Apr 60) that's on new production models.

## TB or TM?

It tells you on page 79 of TM 9-1430-253-20 (Oct 59) that you should paint red circles around Nike-Hercules lube fittings. And TB 9-265 (Dec 58) says painting of the circles is no longer authorized. Which is right? The TB. Don't paint around the fittings.

## Shorted 60KW fuel injection pump

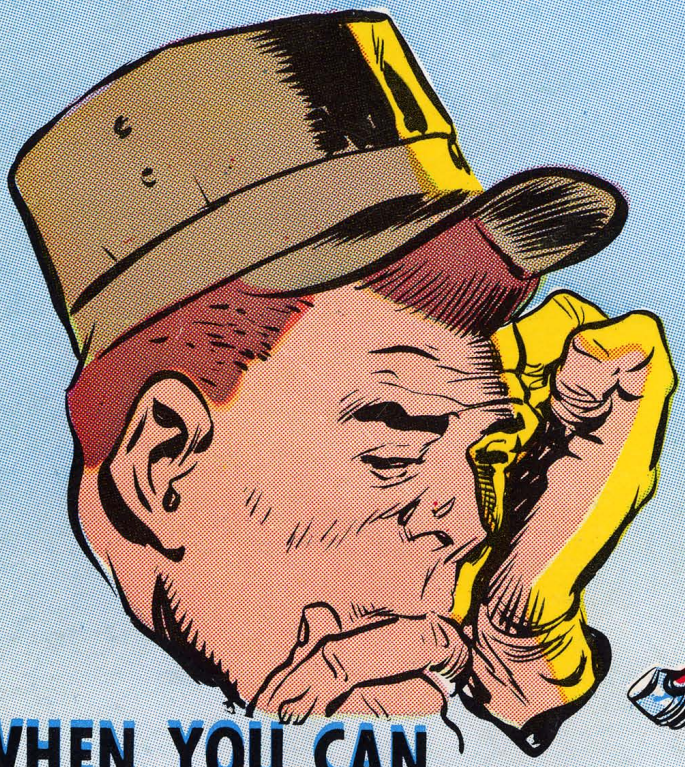
On Szekely and Hol-Gar 60KW generators, some Roosa-Master Model D and DB pumps have been caught leaking current past the insulating tubes on the solenoid binding posts. If your pumps are shorting at this point, your support shop has the scoop to fix 'em by re-drilling the cover and replacing the existing insulating tubes and washers with improved-type tubes.

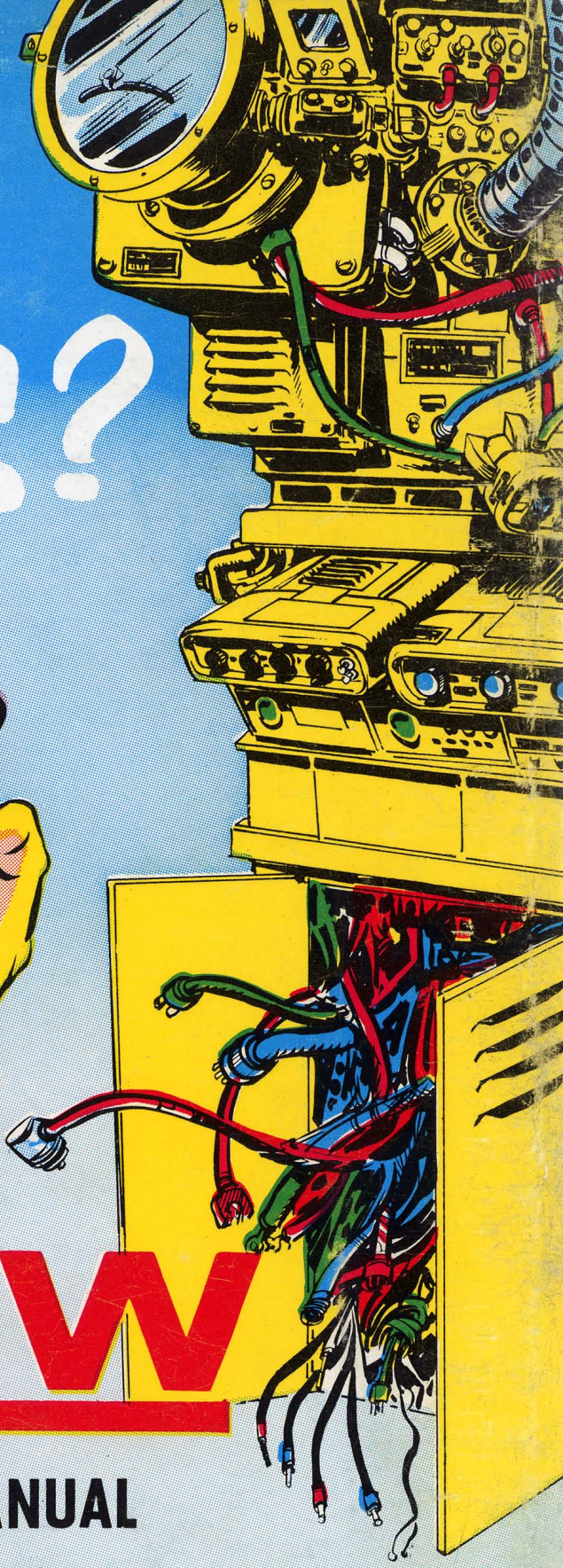
## Authorized repair parts

You're maybe wondering about repair parts for your Nike-Hercules rocket motor cluster winterization kit. You know the one—the word on how to install it is in a book, dated 29 Oct 1959, comes with the kit. The deal is that the repair parts you're authorized are listed in TM 9-1410-250-20P/1 (25 Aug 60). If the parts don't show up in the TM, you're not authorized them.

**Would You Stake Your Life on the Condition of Your Equipment?**

# WHY GUESS?





## WHEN YOU CAN

# KNOW

## USE YOUR TECH MANUAL

If you don't have one for your equipment, get the manual's number from the Index, DA Pamphlet 310-4...

And order it on DA Form 17 from your Publications Section.